

Volume 20

Pages 3849 - 4029

UNITED STATES DISTRICT COURT

NORTHERN DISTRICT OF CALIFORNIA

Before The Honorable Jeffrey S. White, Judge

UNITED STATES OF AMERICA,)	
)	
Plaintiff,)	
)	
VS.)	NO. CR 11-00573 JSW
)	
WALTER LIEW; ROBERT MAEGERLE;)	
and USA PERFORMANCE TECHNOLOGY,)	
INC.,)	
)	
Defendants.)	
)	

San Francisco, California
Wednesday, February 12, 2014

TRANSCRIPT OF PROCEEDINGS

APPEARANCES:

For Plaintiff:

MELINDA HAAG
United States Attorney
450 Golden Gate Avenue
San Francisco, California 94102
BY: PETE AXELROD
JOHN H. HEMANN
ASSISTANT UNITED STATES ATTORNEYS

U.S. DEPARTMENT OF JUSTICE
600 E Street NW
Washington, D.C. 20044
BY: RICHARD S. SCOTT
ASSISTANT U.S. ATTORNEY

(APPEARANCES CONTINUED ON FOLLOWING PAGE)

Reported by: Jo Ann Bryce, CSR No. 3321, RMR, CRR, FCRR
Official Reporter

APPEARANCES: (CONTINUED)

For Defendant Walter Liew and USA Performance Technology, Inc.:

KEKER & VAN NEST LLP

633 Battery Street

San Francisco, California 94111

BY: STUART L. GASNER

SIMONA A. AGNOLUCCI

KATHERINE M. LOVETT

CHRISTINA BLAIS

ATTORNEYS AT LAW

For Defendant Robert J. Maegerle:

MCKENNEY & FROELICH

1349 West Peachtree Street

Two Midtown Plaza - Suite 1250

Atlanta, Georgia 30309

BY: JEROME J. FROELICH, JR.

ATTORNEY AT LAW

I N D E X

Wednesday, February 12, 2014

DEFENDANTS' WITNESSESPAGE VOL.COOPER, PAUL ANTHONY (RECALLED)

(PREVIOUSLY SWORN)

3857 20

Direct Examination resumed by Mr. Gasner

3858 20

Cross-Examination by Mr. Axelrod

3933 20

E X H I B I T STRIAL EXHIBITSIDEN EVID VOL.

189

3983 20

2285

3870 20

2318

3871 20

4011

3933 20

Wednesday - February 12, 2014

7:51 a.m.m.

P R O C E E D I N G S

---000---

(Proceedings were heard out of the presence of the jury:)

THE COURT: Good morning. Please be seated.

Please call the case.

THE CLERK: Calling Case Number CR-11-573,
United States versus Walter Liew, United States versus Robert
Maegerle, and United States versus USAPTI.

Counsel, please state your appearances.

MR. AXELROD: Good morning, Your Honor. Pete Axelrod,
John Hemann, and Richard Scott for the United States.

THE COURT: Good morning.

MR. GASNER: Good morning, Your Honor. Stuart Gasner,
Simona Agnolucci for defendants USAPTI and Walter Liew.

Mr. Liew is present.

THE COURT: Good morning, everybody.

MR. FROELICH: Good morning, Your Honor.

MS. AGNOLUCCI: Good morning, Your Honor.

THE COURT: All right. So I hear that the parties
don't have any issues to raise this morning. Is that correct?

MR. GASNER: That's true, Your Honor.

MR. AXELROD: That's correct, Your Honor.

THE COURT: All right. So the only issue that the
Court needs to address is the submission that the Court ordered

1 from the defendants Walter Liew and USAPTI.

2 **MR. GASNER:** Your Honor, if I might interrupt briefly,
3 I would ask Mr. Cooper to leave.

4 **THE COURT:** Yes. Thank you.

5 (Pause in proceedings.)

6 **THE COURT:** All right. Mr. Cooper is gone.

7 So the defendants produced two volumes of documents. One,
8 the first volume were, I think, the documents that -- the
9 relevant documents, and the second volume, simply, was the
10 report submitted in the case by Mr. Cooper so the Court could
11 determine whether -- the extent to which the documents
12 submitted were subsumed within Mr. Cooper's report.

13 Having reviewed the documents submitted by the defendants,
14 the Court does not find that any of those documents constitute
15 Jencks material, reverse Jencks. The standard is not -- and
16 the statute is not -- this is not a civil case. We're not
17 dealing with Rule 26; we're dealing with Rule 16. And I don't
18 find any of these documents to be -- constitute Jencks -- or
19 reverse Jencks; and, therefore, they will not be turned over to
20 the United States.

21 The one housekeeping matter that I wanted to raise with
22 the defendants is, the defendants, with their documentary
23 submission, included or submitted a four-page, in effect,
24 summary with some argument -- summary of the documents and some
25 argument as to why the documents were not Rule 16 or were not

1 reverse Jencks, were not Rule 16 materials and discoverable.

2 And, so, my question to you, Mr. Gasner is: Is there any
3 reason why this document, this summary or argument, could not
4 be filed in the public record?

5 **MR. GASNER:** Your Honor, it does describe the
6 materials. We filed it under seal in camera, and it was really
7 for the Court's guidance in light of the Court's ruling. We
8 don't think it's appropriate for it to be on the public record.

9 **THE COURT:** But is that true of all of this? Because
10 there are documents -- there are some -- I mean, as you know,
11 Mr. Gasner, the Court is supposed to be, given the proceedings
12 are public, fairly strict when it comes to filing matters under
13 seal; and there are portions of the -- I won't even call it a
14 brief, but the submission that clearly are not either work
15 product or properly subject to seal.

16 I mean, as an example -- and I won't get into the detail,
17 but there's a procedural history here which clearly is not
18 subject to being sealed, and there may be other aspects of it.
19 I don't know.

20 But I would suggest, then, that the -- I'll give the
21 defendants an opportunity to present a redacted version, and I
22 will look at it, as I would any matter that is proposed to be
23 filed under seal, and determine whether I agree with the
24 defendants' position. And if I do agree, then we'll just file
25 the redacted version in the public record.

1 I'm not asking for or even allowing the Government to
2 respond, because they don't get to respond on this and I've
3 already made my decision. It's pretty clear that these
4 materials are not Jencks. So that's the Court's ruling, and
5 this will be -- should be filed -- the documents themselves
6 should be filed appropriately with the clerk under seal, and
7 that sealing will continue.

8 **MR. GASNER:** When would the Court prefer that we file
9 our redacted version?

10 **THE COURT:** There's no hurry. You can do it by close
11 of business tomorrow.

12 **MR. GASNER:** Should that be filed, Your Honor, or
13 lodged with the Court?

14 **THE COURT:** I think filed because, by definition, the
15 defendants' position is going to be that the unredacted
16 version -- or the redacted version is the one that they are
17 proposing to be filed.

18 So unless I say, "Oh, no, the defendant should have sealed
19 more of it," which I doubt I will do, it should be filed in the
20 public record as you would when you make any application, as
21 you have in this case, to seal documents.

22 **MR. GASNER:** Very well.

23 **THE COURT:** All right. Yes, anything you want to say?

24 **MR. AXELROD:** No, Your Honor.

25 **THE COURT:** Okay. Very well, then. Let's see if the

1 jury is here.

2 Ms. Ottolini, if they are, we can resume with the
3 testimony.

4 (Pause in proceedings.)

5 **MR. FROELICH:** Your Honor, just one thing. It's a
6 housekeeping matter. I've stayed up late and worked on the --
7 and got up early this morning and worked on the charges. My
8 office is shut down. Everything is shut down in Atlanta. I
9 may be -- I'm going to have to print out everything from my
10 hotel, and it may be a few minutes late. It won't be much
11 late, but I think, actually, if my secretary can file it from
12 her home, it would be all right. But I won't know until we
13 take a break.

14 **THE COURT:** All right. Well, let us know, and
15 hopefully your mayor won't handle this storm the way he did the
16 last one. He can only improve on what he did.

17 **MR. FROELICH:** I was just going to say, Your Honor, it
18 can only get better.

19 **THE COURT:** Yes.

20 **MR. FROELICH:** The whole city is shut down. They shut
21 the whole city down yesterday at noon.

22 **THE COURT:** All right. That's fine.

23 (Pause in proceedings.)

24 **MR. HEMANN:** Your Honor, just for the record,
25 Mr. Scott -- I'm sorry, Jo Ann.

1 I think that Mr. Froelich actually --

2 **THE CLERK:** We're just waiting for one juror.

3 **THE COURT:** Yes? Okay. Thank you.

4 **MR. HEMANN:** Mr. Froelich didn't formally enter his
5 appearance this morning. I think we moved on before
6 Mr. Froelich announced himself.

7 **THE COURT:** Oh, I apologize. I'm sorry, Mr. Froelich.
8 I do that to you all the time.

9 **MR. FROELICH:** I don't mind staying under the radar.

10 Your Honor, Jerry Froelich for Mr. Maegerle. Mr. Maegerle
11 is present in the courtroom. We've been here all through this.

12 **THE COURT:** I know you were. I apologize,
13 Mr. Maegerle.

14 **MR. HEMANN:** Thank you, Your Honor. And thank you,
15 Your Honor, for looking at those this morning early, the Jencks
16 material or not Jencks materials.

17 **THE COURT:** You're welcome.

18 (Pause in proceedings.)

19 (Proceedings were heard in the presence of the jury:)

20 **THE COURT:** Please be seated.

21 You may resume the stand, Mr. Cooper.

22 **PAUL ANTHONY COOPER,**
23 called as a witness for the Defendants, having been previously
24 duly sworn, testified further as follows:

25 **THE COURT:** You may proceed.

1 First, good morning, ladies and gentlemen. Thank you
2 again for your punctuality, and we're ready to start; and we're
3 continuing in the defendant Walter Liew and USAPTI's case with
4 the direct examination of Mr. Cooper, the Defense expert on
5 technology.

6 You may proceed.

7 MR. GASNER: Thank you, Your Honor.

8 DIRECT EXAMINATION (resumed)

9 BY MR. GASNER:

10 Q. Good morning, Mr. Cooper.

11 A. Good morning.

12 MR. GASNER: Mr. Guevara, if you could put up 2618,
13 previously admitted.

14 Q. We're in the oxidation part of the plant; right,
15 Mr. Cooper?

16 A. That's correct.

17 Q. And I'd like to talk a little bit about the reactor here
18 in the 30K plant.

19 So if we could zoom on that, Mr. Guevara. Okay. Let's
20 zoom in a little bit. Great.

21 Okay. So if you could just identify briefly for the jury
22 the different parts of the oxidation reactor.

23 A. Certainly. The back of the reactor is what is called a
24 combustion chamber. That is where oxygen comes in and we burn
25 toluene.

1 Q. Okay. And kind of go in the direction of the flow of the
2 process, if you would.

3 A. The next section has various names. I call it the core
4 reducer. The diameter -- the inside diameter of the pipe is
5 reduced so you get the oxygen flowing in a straight line, which
6 is this section here (indicating).

7 Q. Okay. Maybe you can give us an arrow.

8 A. (Witness complying.)

9 Q. Perfect. Okay.

10 And then what happens after that point in the process?

11 A. Then after that, in this section here (indicating) -- let
12 me try and draw a circle.

13 Q. Okay.

14 A. -- that's what is called the insert in which the $TiCl_4$ is
15 introduced through a -- basically, a gap between two pipes, and
16 that's called the slot, in general, in our industry. $TiCl_4$
17 enters and begins to react with the oxygen that's flowing down
18 the center of the pipe.

19 Q. Okay. So the slot is in that narrow part that you've got
20 the circle drawn around?

21 A. That is correct.

22 Q. Can you describe for the members of the jury -- we heard a
23 lot from Dr. Diemer about the slot and research that he did in
24 that regard. Can you describe, in kind of verbal terms, what
25 the slot looks like and what it does?

1 **A.** The way I describe it, it looks like if you hold two
2 toilet rolls together but don't quite touch them, the bit in
3 the middle is called the slot. In other words, there's two
4 cylinders coming together but not quite touching, and the gap
5 between is called the slot.

6 **Q.** And do slots come in different dimensions?

7 **A.** Yeah. There's two main dimensions associated with the
8 slot. One is the inside diameter, and one is, actually, the
9 width of the slot, the distance apart of the two cylinders.
10 They vary -- even on the plants that I've worked on, they vary
11 significantly.

12 **Q.** And if you could tell us, what is the -- what's the
13 function of the slot?

14 **A.** It's to get the TiCl_4 flowing. And because it's a
15 circular gap, it spreads the TiCl_4 uniformly around so when it
16 enters the oxygen, it mixes uniformly. And it also creates a
17 mincing action. So the TiCl_4 actually mixes into the oxygen.
18 How fast it flows through the slot determines how fast it
19 mixes.

20 **Q.** So there's a slot that goes all the way around the insert.
21 Is that the way it works?

22 **A.** That is correct.

23 **Q.** And you described it as two kind of ill-fitting cylinders?

24 **A.** Yes.

25 **Q.** Okay. Let's take a look at previously admitted

1 Exhibit 2940.

2 **MR. GASNER:** May I approach, Your Honor?

3 **THE COURT:** Yes, you may.

4 **BY MR. GASNER:**

5 **Q.** Have you reviewed that document?

6 **A.** Yes, sir, I have.

7 **Q.** What is it?

8 **A.** This is the detail design specification for the oxidation
9 reactor for the 30K.

10 **Q.** So let's go to -- I believe it's page 10, Mr. Guevara.
11 And let's blow up the side view.

12 So we looked at the 3D drawing, and now we're looking at a
13 cross-section of it. Can you, again, walk the jurors through
14 the different parts of the reactor from left to right?

15 **A.** Certainly. This section here (indicating) is what is
16 called a combustion chamber. All of this section is refractory
17 line. This is very high temperatures that we're talking about,
18 in excess of 1500 degrees centigrade.

19 Oxygen comes in at the back.

20 **Q.** Okay. And you've drawn a horizontal line on the left side
21 of the drawing.

22 **A.** There, coming into that area there (indicating). Oxygen
23 flows into there. Also in that area is what is called the
24 toluene nozzle.

25 **Q.** What is toluene?

1 **A.** Toluene is a hydrocarbon that is used as a fuel in this
2 case. It's used because it has relatively low amounts of
3 hydrogen. Hydrogen will react with chlorine to form
4 hydrochloric acid, and you don't want to form that because you
5 could roast the plant.

6 **Q.** Okay. So that heats up the oxygen. Then walk us through
7 the reactor left to right, if you would.

8 **A.** So the -- there is a very hot flame in here in this area,
9 approximately here (indicating). The oxygen then flows down
10 this pipe (indicating) into what I call the core reducer. And
11 what the reducer does, it lines up the oxygen flow to enter
12 into where the $TiCl_4$ is going to come into the process.

13 It then expands a little bit here (indicating) to match
14 what we talked about yesterday, which is the insert, which
15 is -- this is the insert part.

16 **Q.** Okay. And that's the part that has the little holes where
17 the nitrogen comes in you talked about?

18 **A.** That is correct.

19 **Q.** Okay. And where does the $TiCl$ come in?

20 **A.** It's not very clearly shown, but it's actually in this
21 area here (indicating).

22 **Q.** All right. Now, if you go above that, there's some words
23 that say "spacer," "adjustable section," and "spacer." Do you
24 see that?

25 **A.** Yes, I do.

1 Q. Can you tell the members of the jury what that means?

2 A. The speed of the $TiCl_4$ entering the oxygen is quite
3 critical to how small or how large the particles are made.
4 It's an area where, certainly in my experience, there's a lot
5 of trial and error goes on to get this exactly right.

6 You can do some approximate calculations; but, in general,
7 as I said, the reactors I've worked with, they all allow this
8 slot dimension width to be adjusted until you get it right.
9 It's very flow-rate sensitive. It's very pressure sensitive.
10 It's temperature sensitive. So you really have to fit it into
11 the particular reactor you're running.

12 Q. Is it fair to call this an adjustable slot?

13 A. Yes, that's what it's called.

14 Q. And when was this designed, this particular exhibit, 2940?
15 This is --

16 A. I see this is November '08 on the drawing.

17 Q. Okay. And based on your review of the design of the
18 reactor, did this adjustable slot design ever change?

19 A. No, it was always the same.

20 Q. Who makes decisions in titanium dioxide plants as to how
21 big to make the slot?

22 A. Generally, you do get a recommendation from the R&D; but
23 in most cases it's plant personnel like me, as the process
24 engineering manager, who determine what the pigment is actually
25 looking like, particle size. And then we would make

1 recommendations and, actually, do the design to alter the width
2 of the slot to alter the pigment.

3 **Q.** When you say "R&D," you mean research and development?

4 **A.** Research and development.

5 **Q.** And these are the R&D people in the plant after it's
6 constructed?

7 **A.** No. No, they usually stay back in their nice clean
8 offices in their research department. They don't often visit
9 the plant.

10 **Q.** Okay. So they may be in the home office, but they're
11 giving advice to people at the plant after the plant is built.

12 Is that the way it works?

13 **A.** That is correct.

14 **Q.** Okay. Let's talk a little bit about the flue pond.

15 So, Mr. Guevara, you can take that off. Thank you.

16 And I'd like to show you one of the emails that was
17 discussed. This is Exhibit 108, which I seem not to have the
18 original of. If we can get that quickly.

19 **MR. GASNER:** May I approach, Your Honor?

20 **THE COURT:** Yes, you may.

21 **BY MR. GASNER:**

22 **Q.** So I've displayed one of the emails that the Government
23 discussed with Mr. Dayton, and it talks about checking the
24 Kuan Yin design and scaling up to get a total pond square
25 footage.

1 Did you review this email?

2 A. Yes, I did.

3 Q. So you reviewed Mr. Dayton's testimony, I take it?

4 A. Yes, I did.

5 Q. And if I recall correctly, Mr. Dayton admitted that one is
6 able to calculate the length of the flue pond from
7 Google Earth.

8 Do you recall his testimony on that?

9 A. Yes. Yes.

10 Q. But his testimony was that you cannot work out the area of
11 the flue pond from Google Earth. Do you remember him talking
12 about that?

13 A. Yes, I do.

14 Q. What do you say in response?

15 A. It is possible to estimate the diameter of the flue pond
16 from Google Earth; however, you don't really need to do that.
17 There are a number of patents which actually tell you what the
18 DuPont cooling-length diameter is. Once you know the diameter
19 of the pipe, you very easily, simple mathematics, calculates
20 the area.

21 Q. Let's --

22 MR. GASNER: Your Honor, may I approach?

23 Actually, what I'd like to do, Your Honor, if I might, is
24 to use the ELMO to show some Google Earth photographs by -- as
25 a demonstrative.

1 **THE COURT:** Very well.

2 **MR. GASNER:** Thank you.

3 **Q.** So I'm putting on the ELMO a Google Earth photo of the
4 DeLisle plant. Do you recognize this document?

5 **A.** Yes. I did it.

6 **Q.** And how did you go about doing it?

7 **A.** You just use Google Earth, which is a free program on the
8 Internet. You know the address of the DeLisle plant because
9 they're all published. So you zoom in on it, and then you take
10 what is called a screen capture to actually get a photographic
11 quality.

12 **MR. AXELROD:** Your Honor, I think before this is
13 displayed -- I understand this is a demonstrative, but before
14 it's displayed to the jury, it would be useful to have some
15 foundation about when this photograph was taken?

16 **THE COURT:** Yes. Would you do that? Take it off the
17 screen, please. I think that's a fair comment.

18 **MR. GASNER:** Certainly.

19 **THE COURT:** Please lay some further foundation. Thank
20 you.

21 **BY MR. GASNER:**

22 **Q.** When did you take this screenshot from Google Earth?

23 **A.** The end of last year.

24 **Q.** And based on your research, when was Google Earth
25 available?

1 **A.** The earliest ones I've looked at, purely relating to
2 titanium dioxide, about 1997 was the earliest I found.

3 **Q.** And other than Google Earth or other publicly available
4 Internet satellite imagery, was one able to get photographs of
5 comparable quality to the one that we were just looking at,
6 Exhibit 3509, through other means within your industry?

7 **A.** Yes. In fact, I think it was Hurricane Katrina came
8 through the gulf. NOAA, which is a Government organization,
9 took numerous photographs because DeLisle was destroyed in that
10 hurricane. It was flooded out. And they published them on
11 their website.

12 **Q.** Were NOAA photographs -- and that's the National
13 Oceanographic --

14 **A.** National Oceanographic and Atmospheric Administration, I
15 think it is.

16 **Q.** Were NOAA satellite photographs available even before
17 Hurricane Katrina?

18 **A.** Not of the TiO2 plants. I think it was the first time
19 they'd actually shot one with their high-resolution satellites.

20 **MR. GASNER:** Your Honor, may I display Exhibit 3509?

21 **MR. AXELROD:** I don't believe there's a foundation of
22 when the actual picture on the board was taken.

23 **THE COURT:** All right. When did you take the picture,
24 sir?

25 **THE WITNESS:** I dropped it down about November of last

1 year.

2 **THE COURT:** All right.

3 **MR. AXELROD:** I'm sorry, Your Honor. The question I
4 have is not when he looked at it, but when the actual picture
5 on Google Earth was taken. There's no indication of when the
6 picture was taken.

7 **THE COURT:** All right. Do you know when it was
8 actually taken?

9 **THE WITNESS:** No, but it's actually on the photograph.

10 **THE COURT:** To the extent that's an objection, I'll
11 overrule the objection. It's only a demonstrative aid, and I
12 think sufficient foundation has been set forth, and you may
13 display it. It won't go into evidence.

14 **BY MR. GASNER:**

15 **Q.** So just -- I believe, that there is an imagery date that's
16 in the lower left-hand corner. Do you see that?

17 **A.** That is correct.

18 **Q.** That's 9/17/2007; is that right?

19 **A.** That is correct.

20 **Q.** Okay. So let's -- just for purposes of illustrating your
21 testimony, can you tell us what -- where I'm pointing with a
22 pen, what is that?

23 **A.** That is one of the flue ponds. DeLisle has two lines.
24 That is one of them, and the one next to it is the other flue
25 pond.

1 Q. Okay. So this is another flue pond over here
2 (indicating)?

3 A. Yes.

4 Q. And what is the kind of serpentine thing?

5 A. That is actually the flue pipe that we're discussing.
6 It's slightly fuzzy because it's actually under water.

7 Q. Okay. So as we were discussing --

8 MR. GASNER: I'm going to take this off if I might,
9 Your Honor.

10 THE COURT: Yes, you may.

11 BY MR. GASNER:

12 Q. As we were discussing, Mr. Dayton admitted that you can
13 calculate the length of the flue pond from Google Earth; and
14 you were saying that from patents, you can calculate the area.

15 Can you tell the members of the jury how one would go
16 about doing that?

17 A. Well, the patents actually tell you the diameter of the
18 pipe. So the surface area of the pipe is just pi, which is a
19 fixed number. You multiply it by the diameter, which gives you
20 square foot per foot; and then you multiply by the total length
21 of the pipe, which gives you the total square foot, which is
22 similar to the number quoted in this email.

23 Q. Let me show you one of the patents that you discussed in
24 your report.

25 MR. GASNER: May I approach, Your Honor, with

1 Exhibit 2285?

2 **THE COURT:** Yes.

3 **BY MR. GASNER:**

4 **Q.** What is this, Mr. Cooper?

5 **A.** This is a DuPont patent of 1970.

6 **Q.** Does it relate to your opinions about the ability to
7 calculate the area of a flue pond from public information?

8 **A.** Yes, it does.

9 **MR. GASNER:** Your Honor, move the admission of 2285.

10 **THE COURT:** Any objection?

11 **MR. AXELROD:** No objection, Your Honor.

12 **THE COURT:** It's admitted.

13 (Trial Exhibit 2285 received in evidence)

14 **MR. GASNER:** Mr. Guevara, if you could blow up the
15 front section of the patent.

16 **Q.** Can you tell us who this patent was assigned to?

17 **A.** This was assigned to DuPont.

18 **Q.** What year was the patent issued?

19 **A.** 1970.

20 **Q.** Can you take a look at Column 2, lines 53 through 55?

21 **A.** Yes, I have them.

22 **Q.** Okay. Can you tell the members of the jury what is
23 significant to your opinions in this area?

24 **A.** Yes. This is going back one stage from the calculation
25 I've just described. What it tells you is the flow in the

1 first part of the flue pipe is going to be about 200 feet a
2 second.

3 Using that 200 feet per second and going to the process
4 flow diagram, you know what the flow rate of all the gases down
5 that flue pipe is.

6 So, very simply, you can calculate the diameter of the
7 pipe using those two numbers. It's a couple of lines of simple
8 mathematics.

9 Again, once you've got the diameter, then you can
10 calculate the surface area of the pipe.

11 **MR. GASNER:** Your Honor, may I approach with
12 Exhibit 2318?

13 **THE COURT:** Yes.

14 **BY MR. GASNER:**

15 **Q.** What is 2318, Mr. Cooper?

16 **A.** This is another patent assigned to DuPont, dated 1990.

17 **Q.** And does it relate to your opinions about calculating the
18 area of a flue pond from public materials?

19 **A.** Yeah. The first picture shows a diagram of a modified
20 flue pipe that is used.

21 **MR. GASNER:** Your Honor, I move the admission of 2318.

22 **THE COURT:** Any objection?

23 **MR. AXELROD:** No objection, Your Honor.

24 **THE COURT:** Admitted.

25 (Trial Exhibit 2318 received in evidence)

1 **MR. GASNER:** So, again, Mr. Guevara, if you could --
2 you've already got it up there.

3 **Q.** Is this a DuPont patent?

4 **A.** Yeah, this is a DuPont patent.

5 **Q.** Let's take a look at Column 4, line 14. And can you tell
6 the members of the jury how this public disclosure relates to
7 your opinions about the ability to calculate the area of a flue
8 pond from public materials?

9 **A.** Actually, it starts line 14 goes through about line 17,
10 and what it says is the end of the conduit, which in this case
11 is the flue pipe, had an interior diameter of 11.5 inches which
12 tapered to 12.25 inches interior diameter.

13 In other words, it told you the diameter of the pipe that
14 is used in this case, and that was before you use the diameter
15 to calculate the surface area of the foot, and then multiply by
16 the length of the flue pond, and you have the total surface
17 area.

18 **Q.** We heard some testimony earlier in the case about the
19 elbows in a flue pond and how they're shaped.

20 Did you read that testimony?

21 **A.** Yes, I did.

22 **Q.** Can you tell the members of the jury, is there a body of
23 literature around designing elbows for pneumatic systems?

24 **A.** Yeah. The flue pipe itself does two things. One, it
25 cools the gases, but also it conveys the titanium dioxide so it

1 can be collected later on in the process.

2 Pneumatic conveying has got a whole study section of its
3 own because it's used in many, many industries; and there are a
4 number of designs of bends, particularly because bends wear
5 rapidly as the solids change direction. They rub against the
6 pipe and wear the pipe. So there's a detailed background.
7 There's books and papers and articles written on how to avoid
8 this wear.

9 **MR. GASNER:** Your Honor, may I approach the witness
10 with Exhibit 3229?

11 **THE COURT:** Yes.

12 **BY MR. GASNER:**

13 **Q.** What is this, Mr. Cooper?

14 **A.** This is a paper from the *Chemical Engineering Progress*
15 *Magazine*, which is a publication of the American Institute of
16 Chemical Engineers, dealing with solids handling and selecting
17 elbows for pneumatic conveying systems.

18 **Q.** Does this relate to your opinions about the design of the
19 elbows for the 30K and 100K systems?

20 **A.** Yes, it does.

21 **MR. GASNER:** Your Honor, I request permission to
22 display this just for demonstrative purposes.

23 **THE COURT:** All right. Any objection?

24 **MR. AXELROD:** No objection, Your Honor.

25 **THE COURT:** All right. Go ahead.

1 BY MR. GASNER:

2 Q. Sir, if you can tell the members of the jury what this
3 article is about, just at a high level.

4 A. Basically, what it's saying is that in order to avoid
5 abrasion, which is the wear of the pipe by the solids flowing
6 inside it, you can use various designs of bends.

7 The straight pipes are not a problem. They don't wear
8 because the solids don't strike the pipe walls, but at the
9 bends -- and this actually shows various types of design that
10 can be used in pneumatic conveying systems.

11 Page 30 is one I'm particularly familiar with because I've
12 actually used that design.

13 Q. Let's take a look at page 30, if we could, Mr. Guevara.
14 Let's go -- there you go. And let's blow up the pictures.

15 Is that -- are those the designs that you've used in your
16 practice?

17 A. Yeah. The one on the left particularly.

18 Q. Okay. So perhaps you can tell the members of the jury,
19 what does this illustration tell us about the process of
20 designing elbows for pneumatic systems in terms of corrosion
21 and wear?

22 A. What it tells you, in general, is that you have to put
23 some wear-resistant material in to prevent the wear happening.
24 There's some very hard materials.

25 However, in this case you will actually form a pocket of

1 the material you're conveying so that the conveying materials
2 strike that and, basically, wear against themselves, not
3 against the pipe.

4 Q. So is the design of elbows pneumatic systems, is that
5 something that mechanical engineers learn how to do?

6 A. Oh, yes, and chemical engineers.

7 Q. Let's turn to moving through the system.

8 Let's go back, Mr. Guevara, if we could, to our CAD
9 drawing, 2618, and get ourselves oriented as we continue our
10 tour of the plant. So perhaps you can spin that around so we
11 can -- there we go.

12 We've heard about oxidation direct-fired heaters. That
13 was part of testimony that we heard.

14 Can you tell the members of the jury, what is an oxidation
15 heater?

16 A. There are two on the plant, and these, as we were
17 discussing yesterday, look a bit like wine bottles with long
18 necks. This is one (indicating); this is the other
19 (indicating). The one on the right is the TiCl_4 vaporizer; the
20 one on the left is the oxygen preheater.

21 These are fired heaters, the majority of which are used in
22 the petrochemical industry. They're very common in the
23 petrochemical industry. And this design was adapted to go into
24 the titanium dioxide industry because they are very efficient,
25 they work well, and they're commonly available.

1 **MR. GASNER:** Your Honor, may I approach with
2 previously admitted Exhibit 111?

3 **THE COURT:** Yes.

4 **BY MR. GASNER:**

5 **Q.** This is an email that the Government discussed that,
6 again, is from Mr. Maegerle to Mr. Liew.

7 **A.** I see that.

8 **Q.** CC'd to Jatin Patel. And in it, Mr. Maegerle says
9 (reading):

10 "Walter,

11 "Attached is a preliminary specification for the
12 Pangang oxidation heaters. If you approve, I will send
13 this spec to Lou Kahl for advance review by Petro-Chem
14 prior to the possible visit by Pangang Group to Petro-Chem
15 in October."

16 Do you see that?

17 **A.** Yes, I do.

18 **Q.** What's Petro-Chem?

19 **A.** Petro-Chem Development is one of the largest suppliers of
20 this type of fired heater. Huge business. They've been taking
21 over recently by Heurtey.

22 **Q.** Have you worked with Petro-Chem in your career?

23 **A.** Yes. I've ordered about eight of their units.

24 **Q.** And can you tell the members of the jury, what is the
25 process that you went through in your career in dealing with

1 Petro-Chem for an oxidation-fired heater? Just at a high
2 level, how does that work?

3 **A.** Basically, what you do is, you send them an outline
4 specification, which may be four or five lines, with a flow
5 rate, the temperature, and the pressure.

6 And they then review that. Then they do a complete detail
7 design, including all the mechanical stressing, the burner
8 design, the outside casing design, the foundation design. They
9 will even fabricate it for you, if you want it, on site.

10 So they provide a complete start-to-finish design. You
11 don't -- typically, I have not done detail design of these
12 units because I'd be wasting my time. I let Petro-Chem do it.

13 **Q.** Did you review materials relating to USAPTI and
14 Performance Group's interactions with Petro-Chem as part of
15 your opinions?

16 **A.** Yes, I did.

17 **MR. GASNER:** Your Honor, may I approach with Trial
18 Exhibit 1971?

19 **THE COURT:** Yes, you may.

20 **BY MR. GASNER:**

21 **Q.** What is 1971, Mr. Cooper?

22 **A.** These are the detail specifications prepared by Petro-Chem
23 for the Pangang Group Chongqing Titanium Industry Company. So
24 this is the 100K design. It contains all the details, all the
25 documents, all the services that Petro-Chem is going to provide

1 to Pangang for both the oxygen and the $TiCl_4$ vaporizer.

2 **MR. GASNER:** Your Honor, I'd like to display this for
3 demonstrative purposes only to help illustrate Mr. Cooper's
4 explanation of the relationship with Petro-Chem.

5 **THE COURT:** Any objection?

6 **MR. AXELROD:** No, Your Honor.

7 **THE COURT:** All right. You may proceed.

8 **MR. GASNER:** Thank you, Your Honor.

9 **Q.** So let's look at the header, if you will, Mr. Guevara.

10 And the top line is a fellow named Robert O'Connor at
11 Petro-Chem, and then it's to Mr. Liew, cc'd to a variety of
12 people.

13 Do you see that?

14 **A.** Yes, I do.

15 **Q.** Okay. And then in the attachments, it talks about an
16 oxygen heater and a $TiCl$ heater.

17 Do you see that?

18 **A.** That's correct.

19 **Q.** Okay. And then further down in the body of the email,
20 there's some back-and-forth between Mr. Liew and Mr. O'Connor
21 about the project.

22 **A.** That's correct.

23 **Q.** Okay. Let's go to page 3, if we could, Mr. Guevara.

24 And then there's this set of technical annexes. Do you
25 see that?

1 **A.** I do.

2 **Q.** And thereafter --

3 Let's go to page 5, if we could, Mr. Guevara.

4 There are tables with all kinds of parameters in there.

5 And can you tell the members of the jury just, in this kind of
6 technical annex, how typically would a TiO₂ plant designer deal
7 with Petro-Chem to kind of come up with the right specs for the
8 oxidation heater?

9 **A.** Because of the type of equipment, the supplier of the
10 equipment requires a lot of site data for where the piece of
11 equipment is actually going to be built and used. You need to
12 know how high it is because that alters the air density.
13 They're designing the foundation, so you need to know about
14 earthquake situations.

15 You also need to know all the utilities that are available
16 to you, so the voltages, the electricity supply. Clearly in
17 this case nitrogen is also used. So what is the condition of
18 the nitrogen?

19 And then, most importantly, what is the fuel that is
20 available on-site for use for these big burners?

21 **Q.** Okay. And then what happens? After there's all the
22 site-specific information, what happens next, typically, in
23 this process?

24 **A.** Then the supplier, in this case Petro-Chem, basically,
25 goes away and designs the unit and prepares.

1 First of all, there will be a big document which,
2 actually, tells you what the estimated price is, which is not
3 in this document. But attached to that will be all technical
4 annexes relating to -- very slightly, but usually it has a
5 description of what they're supplying in terms of how it
6 operates. There will be flow rates, temperatures, pressures,
7 lifes, all specified by the supplier, who often is required to
8 guarantee this data.

9 **Q.** Let's pause there. All these flow rates and other things
10 are specified by Petro-Chem?

11 **A.** No. The flow rate, temperature, and the pressure will be
12 supplied by -- usually by the technology supplier. So it will
13 be about -- I don't know -- five, eight lines of typing. It's
14 not very much. Then Petro-Chem take that and do the detail
15 design.

16 **Q.** So let's take a look at page 44 of the report. That's
17 based on the pages in the document, not necessarily the 44th
18 page.

19 Mr. Guevara, if you can --

20 **MR. GUEVARA:** Is that the Bates number?

21 **MR. GASNER:** It's Annex 10.

22 **MR. GUEVARA:** Do you know what the Bates number is?

23 **MR. GASNER:** The Bates number ends in 8727.

24 **MR. GUEVARA:** Thank you.
25

1 **BY MR. GASNER:**

2 **Q.** So let's blow that up.

3 And what we're looking at on the screen now is a bunch of
4 references to DuPont. Do you see that?

5 **A.** Yes, I do.

6 **Q.** And this is called a reference list, and it's got a
7 partial listing of TiCl vapor superheaters.

8 Do you see that?

9 **A.** I do.

10 **Q.** And then it gives the job number, and there are some
11 parameters off on the side there.

12 Do you see those?

13 **A.** Yes, I do.

14 **Q.** Can you tell the members of the jury, what's this?

15 **A.** This is to give confidence to the buyer that Petro-Chem,
16 in this case, has supplied these units before and gives
17 references of major use -- users of these specific items in
18 this specific duty.

19 So they're not Petro-Chem references; they're purely
20 related to titanium dioxide manufacture.

21 **Q.** And, so, they're, basically, telling USAPTI, "You know,
22 here's what we've supplied to DuPont at these various plants";
23 right?

24 **A.** That's correct.

25 **Q.** Is there anything unusual or improper about Petro-Chem

1 doing that in your experience?

2 **A.** No. It's their own design, so they're free to do it. In
3 fact, two of those are my heaters.

4 **Q.** Which ones are yours?

5 **A.** The United Engineers SCM Chemicals, Ashtabula, Ohio, and
6 the BWDS SCM Chemicals, South Humber, UK.

7 I'm sorry. The next one, as well, is mine. SCM
8 Chemicals, Sunbury, Australia.

9 **Q.** And do you feel that's compromising SCM for Petro-Chem
10 doing this?

11 **A.** No, I don't.

12 **Q.** Why not? Why isn't that --

13 **A.** Because it's their equipment. We don't design it. It's
14 their designs; it's not ours.

15 **Q.** So that's the oxidation heater, those beer or wine bottle
16 structures?

17 **A.** That's correct.

18 **Q.** Let's go back to the CAD drawing and move on to the next
19 step of the oxidation plant. Oxidation bag filters. Where are
20 those?

21 **A.** These are these items up at the top of the building
22 (indicating).

23 **Q.** Okay. And, so, tell us what all these vessels are.

24 **A.** After the gases pass through the flue pond to cool and
25 they have the solid titanium dioxide in them, what you need to

1 do is separate the solid titanium dioxide from the gases,
2 because the gases are going to be sent back to the chlorinator
3 for reuse. So these bag filters are fabric filters. They are
4 supplied usually by somebody like MikroPul. They're fairly
5 standard in the industry.

6 Q. Let me ask you to take a look -- well, just while we're
7 still on this, can you just describe -- let's back up a little
8 bit, Mr. Guevara, and perhaps you can just kind of walk us
9 through.

10 We see the flue pond there. We've talked about that. And
11 then there's, like, a vertical pipe coming out of it.

12 Is that -- is that the direction of flow is going up the
13 pipe?

14 A. That is correct.

15 Q. Okay. And then it goes into these four vessels that look
16 like a snow cone with a very tall cylindrical piece of snow on
17 top of them?

18 A. Yes.

19 Q. And perhaps you can just walk us through. So these
20 cooled-down particles are now going into the bag filters. Is
21 that where we are?

22 A. That's correct.

23 Q. And what's inside these things?

24 A. They are a tube of fabric, very similar to the old vacuum
25 cleaner bags. In fact, they operate the other way around in

1 that the dirt, the TiO₂ in this case, sticks to the outside of
2 the bags. The gases pass into the inside of the bags and then
3 flow out of these top pipes here (indicating).

4 Q. Okay.

5 A. And the bag --

6 Q. So the -- how hot is the dust going into the bottom?

7 A. You have to get the temperature down to between 175 and
8 200 degrees C, centigrade, because the bags limit the
9 temperature that they can operate at.

10 Q. And the vacuum cleaner fabric is inside. And what does
11 that do?

12 A. It's, actually, a number of very long tubes of a fabric
13 which is fine enough to collect the titanium dioxide, and it
14 forms a coating on the outside. Every so often you need to
15 remove this TiO₂ that's collected, just like you're emptying
16 the bag. And you inject nitrogen, which, actually, causes the
17 bag to expand and contract, and that releases the titanium
18 dioxide from the bag surface.

19 Small bag filters will have 60 or 80 of these bags in
20 them. Big ones have -- the biggest I ever saw was not on TiO₂,
21 but that had about 4,000 bags.

22 Q. So the dust goes in; it gets caught up in the fabric; and
23 then you hit it with nitrogen. And then the dust goes where?

24 A. Falls off. It falls off into the bottom of the
25 cylindrical section here (indicating), so it can be dropped

1 down for slurring in another part of the process.

2 **MR. GASNER:** Your Honor, may I approach with
3 Exhibit 112, previously admitted?

4 **THE COURT:** Yes, you may.

5 **BY MR. GASNER:**

6 **Q.** This was an email that the Government talked about
7 relating to oxidation filters. And, again, from Mr. Maegerle
8 to Mr. Liew, cc'd to a USAPTI engineer, "Oxidation Filter
9 Spec." And then there's an attachment.

10 Do you see that?

11 **A.** (Witness examines document.) Yes, I do.

12 **Q.** And if you go to the third page, there's some performance
13 specifications. Do you see that?

14 **A.** Yes, I do.

15 **Q.** And then on the last page -- we'll just go there
16 briefly -- there are U.S. suppliers.

17 Do you recognize those companies?

18 **A.** Yes, I do.

19 **Q.** Can you tell the members of the jury, what are those
20 companies?

21 **A.** MikroPul is the major supplier of this piece of equipment
22 in the industry. Fisher-Klosterman supply a similar type.
23 Personally, I don't use them. I use MikroPul's.

24 **Q.** Let's go back to the preceding page. And did you have a
25 chance to review the information here about the specs on the

1 oxidation filters?

2 A. Yes, I did.

3 Q. Did you see anything in here that wasn't publicly
4 disclosed or readily ascertainable, in your opinion?

5 A. No. Everything on there is from patents or textbooks.
6 There's nothing there that's unusual.

7 Q. I mean, looking at it, does this strike you as an
8 oxidation filter spec that's substantially different from
9 others you've seen in your career?

10 A. No. I've written them just like this.

11 Q. Let me show you a document that I've marked as Trial
12 Exhibit 1803.

13 MR. GASNER: May I approach, Your Honor?

14 THE COURT: Yes.

15 BY MR. GASNER:

16 Q. Can you tell the members of the jury what this is, at a
17 high level?

18 A. Yes. This is a quotation from MikroPul to USAPTI with a
19 quotation for the bag filters for -- I believe it's the 30K
20 plant. Yes, the 30K filter.

21 Q. And does this relate to your opinions about the process
22 that USAPTI and Performance Group used to specify the oxidation
23 bag filters?

24 A. Yes. It's a bit like the heaters. These are designed by
25 the supplier. They know all the details. They know how to

1 fabricate and construct them.

2 So what you do is, you send a preliminary quote, which was
3 a previous document, and then, in this case, MikroPul write
4 back and say, "Yes, we like your quotation and your
5 specification and we will manufacture it."

6 Sometimes they say, "We don't like it at all and we'd like
7 to recommend an alternative." Usually --

8 **Q.** Is that what happened here?

9 **A.** Yes. They changed some of the things.

10 **MR. GASNER:** Your Honor, I'd just like to display this
11 for demonstrative purposes to help the witness express his
12 opinion.

13 **MR. AXELROD:** No objection, Your Honor.

14 **THE COURT:** All right. You may.

15 **MR. GASNER:** Let's go to the third page, and one more
16 page, if you would, Mr. Guevara. I guess it's the fourth.
17 There we go. And under "Notes" if you could blow that up.

18 **Q.** Are these notes by the buyer, that is, USAPTI or
19 Performance Group; or are these from the vendor, that is,
20 MikroPul?

21 **A.** These are from MikroPul, the vendor.

22 **Q.** So can you tell the jury what the first note signifies, in
23 your opinion?

24 **A.** They're, actually, telling USAPTI that they didn't like
25 USAPTI's design regarding where the gas and titanium dioxide

1 entered the bag filter and they were recommending an
2 alternative design.

3 **Q.** So what was it that USAPTI was recommending? Do you
4 recall?

5 **A.** They were recommending a -- I believe, a tangential inlet.
6 In other words, it would go into the side of the filter to
7 allow the gases to spin and reduce the dust loading on the
8 filters.

9 What MikroPul said was, "This stuff is too abrasive, and
10 we'd like to go straight on and put in a diffuser to,
11 basically, stop the abrasion."

12 **Q.** What did USAPTI end up doing? Did they go with what they
13 recommended initially, or did they follow the vendor's
14 recommendation?

15 **A.** They followed the vendor's recommendation.

16 **Q.** How about note 2? Tell us about that.

17 **A.** Tables of construction, what they're saying is, there was
18 a suggestion to use aluminum for the bag filter material for
19 the casing, the outside vessel. They're saying they don't do
20 that anymore; so you'll have to go, for the internal bits and
21 pieces, with 316 stainless steel, which is a chemical grade of
22 stainless steel.

23 They don't say it, but they're making a strong point that
24 this is what they've used before, and this is what they would
25 recommend.

1 Q. Let me ask you a few questions about slurry. What is
2 slurry?

3 A. Slurry is water with titanium dioxide particles suspended
4 in it. It's a bit like milk of magnesia, if you know what that
5 is.

6 Q. I do. I've seen it in the drugstore.

7 So let's go back to the CAD drawing, if we could.

8 And where is slurry involved at this stage of the process,
9 if at all?

10 A. Okay. What happens is, the titanium dioxide solid drops
11 into the cone of the bag filters down here (indicating) and
12 then is -- drops into what is called a screw conveyor, which is
13 a piece of pipe with a screw in it which, actually, moves the
14 pigment so it can be collected together and then, in this case,
15 discharged into this vessel here (indicating) -- sorry -- this
16 vessel (indicating), which is the slurring tank.

17 The powder drops in; it's mixed with water so it can be
18 handled later on. The finishing plant, which we're going to go
19 into next, handles slurry. It needs to have it with water. So
20 this is where you do that.

21 The pigment, the base pigment, because it's not got
22 treatment on it at this time, has a very large surface area, so
23 it tends to absorb some of the gases that are in the process.
24 And one of the things that this is designed to do is actually
25 the gases then, as they, what is called, dissolve, come off the

1 surface, it has to be led away and treated. So that's also in
2 this system.

3 **Q.** Is this a standard part of the chloride-route process?

4 **A.** This is -- there are a few times, but all of them have
5 this, with one exception that I can recollect. This system was
6 the original Ashtabula 1 design.

7 **Q.** So if I understand you correctly, we've shaken the vacuum
8 filters and gotten the dust, and now it's -- do you add water
9 into this tank?

10 **A.** That is correct.

11 **Q.** Okay. And then that allows it to get rid of some absorbed
12 gases and send it to the finishing plant?

13 **A.** That is correct.

14 **MR. GASNER:** Your Honor, may I approach with
15 Exhibit 125?

16 **THE COURT:** Yes, you may.

17 **BY MR. GASNER:**

18 **Q.** This is one of the emails that the Government discussed in
19 its case in chief.

20 Have you reviewed this?

21 **A.** Yes, I have.

22 **MR. GASNER:** And could we display this previously
23 admitted exhibit?

24 **THE COURT:** Yes, you may.

25 **MR. GASNER:** Thank you, Your Honor.

1 Q. Again, an email from Mr. Maegerle to Mr. Chen at USAPTI,
2 cc'd to Mr. Liew, subject "Slurry viscosity."

3 What is viscosity?

4 A. That's how thick, whether it's like treacle or it's like
5 water when you put your spoon in it and stir it.

6 Q. And looking down at the rest of the email, have you
7 studied those descriptions of slurry viscosity in reaching your
8 opinions?

9 A. Yes, I have.

10 Q. And how does this description of slurry viscosity compare
11 to anything else you've seen in your career?

12 A. I copied the Ashtabula 1 design for this system, so these
13 numbers are very familiar to me.

14 Q. What do you mean by that?

15 A. 20 centipoise, which is the viscosity, I have used.

16 Q. Okay. So at Ashtabula 1, how does this description that
17 we see in the email of slurry viscosity compare to what you
18 know from your Ashtabula 1 days?

19 A. This is almost identical to the Ashtabula 1.

20 Q. Okay. We're almost out of the oxidation plant.

21 Actually, let's go briefly -- let me ask you. This will
22 make more sense if I show you the email.

23 MR. GASNER: May I approach, Your Honor?

24 THE COURT: Yes.
25

1 **BY MR. GASNER:**

2 **Q.** I'm showing you what's been previously marked as
3 Exhibit 67. Again, this is another email introduced by the
4 Government in their case from Mr. Maegerle to Mr. Liew talking
5 about demineralized water and nitrogen, and it says (reading):

6 "Walter, I was somewhat mistaken. Kuan Yin
7 Basic Data does not call for demineralized water, but does
8 call for a hot water head tank to supply 70-degree" -- or
9 "70F water to the filters" --

10 **MR. AXELROD:** Your Honor, I just want -- I apologize
11 to Mr. Gasner.

12 **MR. GASNER:** I'm sorry. I will edit the numbers --

13 **MR. AXELROD:** Thank you.

14 **MR. GASNER:** -- and move to self-strike that number
15 that I inadvertently --

16 **THE COURT:** All right. The motion is granted.

17 **MR. HEMANN:** -- stated.

18 **Q.** So going back, hot water head tank to supply a certain
19 temperature of water to the filters, and it goes on from there
20 with different numbers.

21 Did you take a look at this?

22 **A.** Yes, I did.

23 **Q.** And a little bit further down, there are other emails
24 between Mr. Maegerle and Mr. Liew talking about this issue of
25 how hot the water should be and what kind of water to use for a

1 certain phase of the process.

2 Do you see that?

3 A. Yes, I do.

4 Q. Can you tell the members of the jury, where are we in the
5 plant at this point?

6 A. We're, actually, in the finishing plant now.

7 Q. Okay. So let's just pause for a second.

8 Do we have the CAD drawing for the finishing plant,
9 Mr. Guevara? 2616, previously admitted.

10 In your reviewing the allegations in this case, did you
11 see much involving the finishing plant?

12 A. No. There's really only two main items that were
13 mentioned.

14 Q. And, again, we talked about the TiCl plant, the oxidation
15 plant. Now this is the third part of TiO2 factories?

16 A. That is correct.

17 Q. Can you tell the members of the jury, what does the
18 finishing plant do?

19 A. Titanium dioxide, as it comes out of the oxidation unit,
20 has some quite difficult properties for the end user to work
21 with. It doesn't go into paint. It doesn't disperse, so it
22 settles very quickly. It doesn't go into plastics. It
23 flocculates and forms lumps on the surface. So what you have
24 to do is modify --

25 Q. You need to tell us what flocculate meets.

1 **A.** Oh. It clumps together. Sorry.

2 **Q.** All right. So continue, please.

3 **A.** So what you do in the finishing plant, mainly, is you put,
4 as I said in my earlier testimony, a coating a bit like the
5 shell of an M & M on it. This helps it go into the mediums
6 that the customer wants. It disperses easily. It doesn't
7 settle. It doesn't clump together. And it makes it a lot
8 easier for the paint manufacturer or the plastics manufacturer
9 to use.

10 There are a number of surface coatings used. They are
11 fairly limited in number, so we all tend to use the same ones.

12 But when you put this surface coating on, you form sodium
13 chloride, salt, as a by-product, which dissolves in the water.

14 And what this particular email deals with is washing that
15 salt out of the pigment before you dry it; otherwise, it would,
16 in the case of paint, corrode the subsurface, the metal you're
17 painting on, because salt is corrosive. So you have to wash it
18 out.

19 **Q.** Is that a standard part of the chloride-route process?

20 **A.** Chloride and sulfate, they all have them.

21 **Q.** So this is in the old sulfate process, you still have to
22 wash the pigment to get the salt out?

23 **A.** That is correct.

24 **Q.** And where -- where does that happen in the CAD drawing?

25 **A.** This one, actually, is for the 100K design. U.S.A. --

1 there are a few different types of filter where you will wash
2 out the sodium chloride. The more later models are these here
3 (indicating), which are called pressure filters. However, this
4 document refers to an older style, which are called rotary drum
5 filters, which have been around since well before I was born,
6 but they are slowly being replaced by pressure filters because
7 they're better at the job.

8 **Q.** So just -- perhaps you can just give us a quick overview.

9 And, Mr. Guevara, I don't know if you can flip this around
10 so that we go left to right, as we've been doing.

11 So just quickly, if you can tell us, what's the process in
12 the 100K plant for finishing, as you see it, on this CAD
13 drawing?

14 **A.** On the extreme left are the tanks that contain the
15 treatment chemicals. These are, again, all solutions because
16 now everything is in the water phase; everything is
17 water-based.

18 Next to those are the treatment tanks. With a couple of
19 exceptions, the industry uses batch tanks. You put a certain
20 amount of titanium dioxide in; then you put your treatment
21 chemicals in; you stir them around usually at 80. 70 to
22 80 degrees centigrade is the typical temperature.

23 After a certain period of time, the coating has formed on
24 the titanium dioxide, so you stop the reaction. And then you
25 pump it forward into the next stage, which is the filter area.

1 Q. Those are kind of the boxcar-looking things we talked
2 about?

3 A. Those are the boxes.

4 Q. Okay. So then it gets filtered there. And then going
5 left to right, what happens next?

6 A. In the filters, what you do is, you actually form
7 something that's called a cake because it actually looks the
8 consistency of cake. And you pass water through it, which
9 absorbs the sodium chloride and washes it out.

10 Q. Where does that happen?

11 A. This is happening in these filters presses here
12 (indicating).

13 Q. Okay.

14 A. It then, in general, needs to be dried, because most
15 customers require a dry powder to go into their formulations.
16 So the next section is drying, and these are these items here
17 (indicating).

18 Q. Okay. And you're pointing to the -- some other snow
19 cone-looking things?

20 A. These are fluidized. In other words, you blow hot air
21 through the filter cake, the TiO₂. Because the titanium
22 dioxide is so small and so light and so fluffy, it blows out of
23 the dryer as it dries.

24 So the next section, again, is to remove the titanium
25 dioxide from the gas stream. And we have a whole series, then,

1 of more bag filters, very similar to the ones in oxidation.

2 Q. Okay. So in the oxidation plant, there was powder; it's
3 turned into slurry; it goes to the finishing plant; and there's
4 a process that you've described; and then it ends up back as
5 powder again?

6 A. That's correct.

7 Q. So let's go to email 67.

8 THE COURT: Before we do that, let's take a stretch
9 break.

10 MR. GASNER: Very well, Your Honor.

11 (Pause in proceedings.)

12 THE COURT: All right. Please be seated when you're
13 ready, ladies and gentlemen.

14 And when they do, you may proceed.

15 MR. GASNER: Thank you, Your Honor.

16 Q. So, Mr. Cooper, let's go back to the email that we were
17 talking about, Number 67, and I want you to note the number,
18 the temperature of the water that is in the top email.

19 Do you see that?

20 A. Yes. It says 70 degrees Fahrenheit.

21 Q. Whoop. You've got to keep that --

22 MR. GASNER: I'll move to strike that, Your Honor.

23 THE COURT: Yes. Granted.

24 BY MR. GASNER:

25 Q. So we're going to simply talk about comparing two numbers

1 on the record. The jury can see what we're talking about. You
2 don't need to say it out loud.

3 But the number that's next to the water to the filters --

4 **MR. GASNER:** And if I might approach, Your Honor, with
5 3100.

6 **THE COURT:** Yes.

7 **BY MR. GASNER:**

8 **Q.** What is Exhibit 3100?

9 **A.** This is an email with attachments from Mr. Amerine and
10 also from FLSmidth, again, who were, actually, the agent for a
11 company called IMCO, who make the rotary drum filters that were
12 used in the 30K process.

13 **MR. GASNER:** Your Honor, permission to display 3100
14 just for illustrative purposes?

15 **THE COURT:** Yes, you may.

16 **THE CLERK:** It's been admitted.

17 **MR. GASNER:** Oh, this has been admitted?

18 **THE COURT:** Yes.

19 **MR. GASNER:** Thank you.

20 **Q.** So let's go to the 3100, Mr. Guevara, and let's go to the
21 top header.

22 This is from Mr. Amerine to Mr. Liew, BJ, and
23 Mr. Maegerle, and it refers to technical appendix Jinzhou 2005,
24 then there's a .pdf.

25 Do you see that?

1 **A.** Yes, I do.

2 **Q.** And then below that -- let's go to the second page, if we
3 could.

4 We met Mr. Amerine here in court. It seems like a long
5 time ago. But let's go to the technical appendix.

6 What is this?

7 **A.** Again, these are standard pieces of equipment which are
8 designed by a supplier. They know how to do it; so they
9 provide the design, the design details, that have worked in
10 their experience.

11 **Q.** So let's go to the page, Mr. Guevara, that ends in Bates
12 Number 3022.

13 And without getting into particular temperatures, do you
14 see where it says, "wash water temperature"?

15 **A.** Yes, I do.

16 **Q.** And there's a number there?

17 **A.** Yes.

18 **Q.** And can you, just for the record, tell us, is that
19 different than the number in Exhibit 67?

20 **A.** (Witness examines document.) Yes, it is significantly
21 different.

22 **Q.** So how, in your experience, does it happen that there
23 might be an email talking about one temperature number and then
24 when it comes time to order the part, it ends up another
25 number?

1 **A.** In this particular case, there would have been discussions
2 between the supplier and USAPTI, Mr. Amerine. The supplier in
3 this case, the agent for the supplier, FLSmith, would have
4 said, "You've got it wrong, and this is what we would recommend
5 for you."

6 The number in the email is much lower than the one in this
7 document. So they're telling them, "You've got to use hotter
8 water to make this work."

9 **Q.** And in your experience with titanium dioxide plants that
10 you've worked at or learned about over the years, is there a
11 normal range of what temperature water is used to get the salt
12 out of the slurry?

13 **A.** Yes, there is.

14 **Q.** And are both these numbers in that range?

15 **A.** No. The one in the quotation is more likely to be
16 correct.

17 **Q.** That's the quotation from the vendor?

18 **A.** That's correct.

19 **MR. GASNER:** I'd like to take a look at a large
20 demonstrative. If I can pull over the blackboard, Your Honor.

21 **THE COURT:** Yes.

22 (Pause in proceedings.)

23 **BY MR. GASNER:**

24 **Q.** I'm going to show you what has been marked as Exhibit 2
25 and admitted into evidence and talked about a lot. And we've

1 referred to this from time to time as Trade Secret 2, or I
2 should say alleged Trade Secret 2.

3 Have you had a chance to study this document?

4 **A.** Yes, in detail.

5 **Q.** And, Mr. Guevara, if we could also put up the electronic
6 version of this, please, which is up on the screen now.

7 So let's do a little guided tour of this.

8 **MR. GASNER:** And, Mr. Axelrod, I've left you a
9 demonstrative with some colors that we're going to overlay.

10 **Q.** So let's go to part 1, lower right-hand corner, in the
11 actual exhibit, Mr. Guevara.

12 Okay. Can you tell the members of the jury, again, what
13 information did you derive from this title block?

14 **A.** This is a standard title block. What it tells you is this
15 drawing is for the Edgemoor plant, the oxidation unit. W/RPS
16 means width. RPS -- RPS is a product. It's a very specific
17 product which we may want to talk about later.

18 **Q.** Let's talk about it now. What does it stand for?

19 **A.** Rutile paper slurry.

20 **Q.** So tell us -- let's break that down. What does rutile
21 mean?

22 **A.** Rutile is the crystal structure that we produce in the
23 chloride plant. It's the most common use in the United States.
24 It's a harder, it's a denser, it's a more durable, it's a much
25 better crystal.

1 Q. Now, the next word in that is "paper."

2 A. Yes.

3 Q. Is rutile crystal usually used for paper?

4 A. No, it's not.

5 Q. What's usually used for paper?

6 A. Usually for paper is anatase, which is a different crystal
7 structure. It's used because it's a softer crystal, and it
8 doesn't erode these big paper-making machines in Kimberly-Clark
9 and places like that. So this is a very unique product.

10 Q. So what is the point of making a paper slurry with rutile
11 crystal?

12 A. There are a few customers in the U.S. who actually use
13 this for quite specialized usages. The Edgemoor plant produces
14 almost the complete U.S. supply. There's one other small
15 supplier, but it doesn't do very much.

16 It is fading as a product to be replaced by more anatase
17 because anatase is actually cheaper. So I wouldn't say it's a
18 dying grade, but it's certainly diminishing in importance in
19 the industry. But it is very specific to the paper industry.

20 Q. Okay. So in a big picture, this is a drawing that relates
21 to what you describe as a niche product for this rutile paper
22 slurry.

23 What's the slurry? Doesn't everybody have slurry?

24 A. No, they don't. This is -- Edgemoor is a very different
25 plant. I've talked -- we just talked about finishing plants.

1 This doesn't have a finishing plant. It does not produce any
2 dry product whatsoever.

3 Q. Okay. So this is unusual in that it's a rutile paper
4 product and it doesn't have a finishing plant?

5 A. That's correct.

6 Q. All right. What else were you able to derive just looking
7 at Section 1 here, the title block?

8 A. It's a very old drawing. It's done in 1993. It does
9 appear to be a proper engineering drawing as opposed to the
10 other drawing we saw, as this is done by the engineering
11 department.

12 I recognize the numbering system because a similar type
13 numbering system was used at Ashtabula 1, line 1.

14 Q. And is there any confidentiality legend on this document?

15 A. Not on this drawing.

16 Q. All right. So let's go to Section 2. It's a little tiny
17 one. And let's blow up the text there.

18 Did you review this?

19 A. Yes, I did.

20 Q. And did you review the testimony of Mr. Dayton, who talked
21 about the different levels of confidentiality within DuPont?

22 A. Yes, I did. It was quite confusing.

23 Q. But despite the confusion, did you --

24 **THE COURT:** Please don't comment in that way.

25 **THE WITNESS:** I'm sorry, Your Honor.

1 **THE COURT:** Thank you very much.

2 **BY MR. GASNER:**

3 **Q.** Were you able to learn the regime of confidentiality at
4 DuPont the way Mr. Dayton described it?

5 **A.** Yes. As he described it, this was a low-level-type
6 confidential -- it wasn't even confidential-type document, but
7 it was a low-level-security type.

8 **Q.** And that's what you've gleaned by comparing Mr. Dayton's
9 testimony to this legend that we're looking at on the screen?

10 **A.** That is correct.

11 **MR. AXELROD:** I'm going to object, Your Honor.

12 **THE COURT:** Sustained.

13 **MR. AXELROD:** And can we have it stricken?

14 **THE COURT:** Yes. The jury will disregard the witness'
15 last answer.

16 **BY MR. GASNER:**

17 **Q.** We'll talk about confidentiality with what I hope will be
18 a proper foundation later today, but for now let's move on.

19 **THE COURT:** Hopefully not too much later.

20 **MR. GASNER:** Yes, indeed. Point well taken,
21 Your Honor.

22 **Q.** So let's move along quickly to the area 3 at the top of
23 the drawing.

24 Can you tell the members of the jury what that is?

25 **A.** This is a flow table showing the chemical compounds, the

1 temperatures, the pressures, the flow rates for each of the
2 numbered lines, which is shown as the line number on top, 1, 2,
3 3, 4, for instance, on this one.

4 Q. Okay. And this does -- unlike the other drawing we looked
5 at, this does have figures in it; true?

6 A. Yes, it does.

7 Q. And can you describe for the members of the jury how this
8 part of the document, typically, works in process flow diagrams
9 of this type?

10 A. This is specific to the design of plant that you're doing
11 at the time. What it's used to do is calculate various
12 equipment sizes and line sizes, but it is very specific to the
13 particular project you're working on.

14 Q. So let's move on. That's area 3 on the diagram. Let's go
15 to areas 4 and 4A. So that's in this left side of the diagram.

16 What's in 4 and 4A?

17 A. 4 is the $TiCl_4$ vaporizer system that we've been
18 discussing. It has one interesting unique feature, that it has
19 an extra piece of equipment in it, which is, in fact, called a
20 preheater here.

21 Q. So Mr. Dayton talked a little bit about that. In your
22 review of the 30K and 100K drawings, did you find any such
23 piece of equipment in the USAPTI or Performance Group drawings?

24 A. No, I did not.

25 Q. Other than that, 4A and 4, what's your opinion about how

1 what we see on Exhibit 2 compares to what is standard in the
2 industry?

3 **A.** These are standard pieces of equipment.

4 **Q.** Let's go on to area 5, AlCl₃ generator.

5 Can you refresh the memory of the jurors as to what that
6 is and does?

7 **A.** This is the Al chloride generator system. DuPont called
8 their vessels by different names to what I'm used to, but the
9 G vessel is the Al chloride generator where you react aluminum
10 pellets with chlorine to form aluminum chloride, which is later
11 reacted in the reactor itself.

12 The feed system above it, the pellet bin, the scale and
13 feeder system, and then, quite importantly, the valves beneath
14 that are typical of the industry; because this system is
15 operating at relatively high pressure, and as you drop the
16 pellets in, you don't want gases going out to atmosphere
17 because there's chlorine in TiCl₄. So you have an interlock
18 system of a number of valves. This is typical of a number of
19 plants, particularly Ashtabula 1, because I replaced it.

20 **Q.** And these other structures that we see in this section --
21 storage bin, manual feed, shop bin, all those things -- how do
22 those fit into your sense of what's standard in the industry?

23 **A.** They're standard. You have to store the aluminum pellets
24 on-site. They normally come in one-ton bags. So you offload
25 them into a storage bin. They're then dropped down into the

1 feeder where they're weighed and then dropped through the valve
2 system into the generator itself. This is very typical.

3 **Q.** Let's go to area 7, scrub salts or scrubs.

4 Can you tell the members of the jury, what are scrubs?

5 **A.** There are a number of different types of material used
6 here. As I mentioned, in the insert the titanium dioxide tends
7 to build up, and then as it goes down the flue pond, it builds
8 up even more.

9 So what you do is, you add a -- what is called a scrubs,
10 which scrubs the surface of the pipe clear of titanium dioxide
11 that's stuck there.

12 Every TiO₂ plant has this -- chloride-route TiO₂ plant has
13 this problem. So there's a number of different scrubs used.
14 This doesn't, actually, say which one it is, but sometimes it's
15 sand; sometimes it's rock salt; sometimes it's actually
16 titanium dioxide itself mating to pellets.

17 But this is typical of a feed system, three-bin system,
18 with a -- this piece of equipment here (indicating) is a rotary
19 valve.

20 **Q.** Where are you pointing?

21 **A.** Sorry. That line there, right there (indicating).

22 **Q.** Okay.

23 **A.** Which, actually, meters the amount of the material going
24 into the flue pond.

25 **Q.** Did you come to learn, in your research, what USAPTI uses

1 as its scrubs material?

2 A. Yes. They use rock salt.

3 Q. Okay. And without saying what it is, did you come to
4 learn what DuPont uses?

5 A. Yes. It is different.

6 Q. Are they the same or different?

7 A. It's different.

8 Q. Okay. So let's go on to the next section, 8, the flue
9 pond. We've heard a lot about that. Is anything on this
10 drawing drawn to scale?

11 A. No, nothing's to scale.

12 Q. All right. So the flue pond is a very large object; the
13 oxidizer is a very small object.

14 So tell us about what, if anything, is significant to you
15 or might be useful to the jury in looking at Exhibit 2 about
16 the flue pond.

17 A. This is a much bigger diameter flue pond. It actually
18 tells you the diameter of the flue pipe. The hot end it tells
19 you 6 --

20 Q. Don't say any numbers.

21 A. It says that number.

22 Q. Okay. A number. All right.

23 A. And then it shows it dropping to a smaller number here
24 (indicating).

25 Q. Okay. And there's indication of two kinds of basins over

1 to the right. What, if anything, does that tell you about how
2 the design on this drawing compares to USAPTI and Performance
3 Group's designs?

4 **A.** DuPont -- you have to take out a lot of heat out of the
5 flue pond. So DuPont -- and it was shown on the Google Earth
6 pictures -- actually mount a cooling tower on the end of the
7 flue pond, mounted right up against it, so it's close. And you
8 actually see it in the screen captures.

9 That is fairly common, but USAPTI chose to have a separate
10 cooling tower that served most of the plant rather than just
11 this one specific duty.

12 **Q.** So USAPTI did it in a different way than what's shown on
13 this diagram?

14 **A.** That is correct.

15 **Q.** Let's go on to area 10 off to the right side here, fume
16 collection.

17 What did you learn in your research about the method shown
18 here compared to publicly available material?

19 **A.** This is -- this is a system that is specifically designed
20 for Edgemoor plant by this drawing. Typically, we combine them
21 with the other scrubbing systems that we saw yesterday. You
22 don't normally have a separate scrubbing system.

23 However, USAPTI did have a scrubbing system in this area,
24 but I've never heard of a paleface scrubber. USAPTI uses a
25 standard scrubber. You're trying to scrub out chlorine, as I

1 mentioned, that dissolves from the TiO₂.

2 Q. Is there anything about this section of the plant that was
3 unique, in your opinion, to this rutile paper slurry product?

4 A. No, it's not specific to the rutile paper slurry. It's
5 just specific to Edgemoor, the way it's done.

6 Q. And in terms of -- there are some slurry tanks shown in
7 area 10. Tell us about that.

8 A. This is different because they have two slurry tanks.
9 What they're doing, actually, these are the product tanks,
10 which, actually, you export from these, the product rutile
11 paper slurry.

12 All of the plants use this as an intermediate tank, a
13 single tank, to feed the finishing plant. But here you're
14 actually pulling product off it, there's two tanks, four pumps.
15 Normally you have one tank and two or three pumps.

16 Q. So these would be only useful if you were -- if your final
17 product was the slurry?

18 A. They would only be useful if you're making rutile paper
19 slurry, and not even useful for making slurry because, again,
20 there's no treatment plant.

21 Q. Okay. So I think we've covered all the different parts of
22 the plant.

23 No, 11. We haven't hit 11.

24 Tell us about gas compression. What did your study of
25 this diagram and the USAPTI products reveal?

1 **A.** What this reveals is that Edgemoor plant uses a compressor
2 system to reduce the reactor pressure. This is not typical of
3 the high-pressure process. It is typical of the low-pressure
4 process. So this plant operated somewhere in between low and
5 high pressure. This equipment is not in any of the USAPTI
6 designs.

7 **Q.** And you mentioned that this is kind of a high-pressure
8 system operating at a lower pressure; is that right?

9 **A.** That's exactly right.

10 **Q.** And how does that affect all these numbers up here
11 (indicating) in Section 3? Does that affect it?

12 **A.** It tells us all of the pressure lines. There's a line
13 specifically that says "Pressure," and those are all different.

14 **MR. GASNER:** Let me approach, if I may, Your Honor,
15 with Exhibit 70.

16 **THE COURT:** Yes.

17 Are you getting close to the end here?

18 **MR. GASNER:** Yes.

19 **THE COURT:** All right. Please do.

20 **THE CLERK:** Was that Exhibit 7-0?

21 **MR. GASNER:** Seven zero.

22 **THE CLERK:** Thank you.

23 **THE COURT:** Yes, you may approach. Thank you.

24 **THE CLERK:** And that's been admitted.

25 **MR. GASNER:** Let's display that, Mr. Guevara, if you

1 would.

2 Q. Let's just identify at the top. It's from Mr. Maegerle to
3 Mr. Liew, and it's a question on AlCl₃ balances.

4 Do you see that?

5 A. Yes, I do.

6 Q. Let's go further. This is an email that the Government
7 talked about in its case in chief, and let's go a little bit
8 further down to the first email.

9 And a long time ago Agent Ho testified about the line that
10 Mr. Guevara has kindly highlighted for me that talks about the
11 AlCl₃ generator inlet. Do you see that?

12 A. Yes, I do.

13 Q. And this is part of an email from Mr. Liew to Mr. Maegerle
14 that, if we go up a little bit above the numbers, Mr. Liew is
15 saying, "Since the amount of aluminum is not shown in your flow
16 sheet, I checked this with the reference sheet that I got from
17 Spitler. The values used there are" --

18 Do you see that?

19 A. Yes, I do.

20 Q. And Agent Ho, did you read her testimony where she talked
21 about those numbers appear similar to some of the numbers in
22 this upper part?

23 A. Yes, I did.

24 Q. Okay. Can you put into context for us what, in your
25 expert opinion -- translate this into English, if you could.

1 There's a lot of technical terms in here.

2 **A.** The Edgemoor plant is -- first of all, it's a very large
3 plant. It's capable of the number that's shown in Column 1,
4 which indicates it's got a very high throughput. It's well
5 known in the industry what it is.

6 The numbers that say "outgoing generator inlet" and
7 "outlet" specifically refer to the numbers and flows required
8 for this large plant. In particular, if you look there, it has
9 an aluminum chloride number and above that it has a chlorine
10 number and an Al number, which is aluminum. So it's, actually,
11 telling you the flow rates to the generator, the inputs and
12 outputs.

13 **Q.** Let's just go up a little bit further in Mr. Liew's email,
14 and after the pleasantries in the first line, Mr. Liew says,
15 quote: (reading)

16 "I started working on putting balances on PFD for
17 oxidation and finishing."

18 Do you see that?

19 **A.** Yes.

20 **Q.** Can you tell the members of the jury what that means in
21 laymen's terms?

22 **A.** The table that's at the top of this particular drawing,
23 USAPTI were beginning to create their own numbers to put in
24 those tables.

25 **Q.** And he goes on to say, "There's an error in molecular

1 weight of AlCl_3 . You have 187. The correct MW for AlCl_3 is
2 133.34."

3 Translate into English, please.

4 **A.** They have got the -- what is the weight of one molecule of
5 Al chloride. They got it wrong in their original calculations.

6 **Q.** So Mr. Liew is pointing out an error in this one molecular
7 weight figure that Mr. Maegerle used?

8 **A.** That's correct.

9 **Q.** Okay. Then the next line Mr. Liew says, "Will this change
10 affect your flow sheet numbers at the AlCl_3 generator?"

11 I think you described what that meant.

12 And the next paragraph he says (reading):

13 "I used stoichiometric calculation to get the
14 theoretical balances of the reaction," and he goes on from
15 there.

16 Okay. What does "stoichiometric" mean?

17 **A.** It means, that equation, you need two atoms of aluminum
18 and three molecules of chlorine exactly to get two molecules of
19 aluminum chloride. "Stoichiometric" means "exact."

20 **Q.** Okay. And then the next sentence Mr. Liew talks about
21 making -- "to make 350 pounds per hour of AlCl_3 , we need a
22 certain amount of chlorine." And he goes on from there.

23 Can you translate that into nontechnical terms? What's
24 Mr. Liew saying at this juncture of the email?

25 **A.** What he's saying is, if you use the stoichiometric, the

1 exact amounts that you require to form two molecules of
2 aluminum chloride, for their particular flow rates they need
3 300 -- sorry, 287 pounds of chlorine to produce 360 pounds of
4 aluminum chloride precisely.

5 **Q.** Okay. And then could you tell us what the rest of the
6 email means in laymen's terms in terms of translating from
7 technical to laymen's terms?

8 **A.** Because of the chemistry in the Al chloride generator, you
9 need an excess of chlorine to make the reaction work at all.
10 So in the larger numbers down below, you can see that they have
11 a large amount of chlorine leaving the generator.

12 In the USAPTI design, they have a very small amount of
13 unreacted chlorine leaving the generator. So they're not
14 pro rata, I think is the -- they're not in ratio, these
15 numbers. They're actually -- USAPTI's design is much less
16 chlorine flow.

17 **Q.** Okay. And let's go back up to the top part where
18 Mr. Maegerle responds, if we could, Mr. Guevara.

19 And can you translate Mr. Maegerle's response into
20 laymen's terms?

21 **A.** Yeah. What he is saying is, with the 40 pounds of
22 aluminum I am adding, I need 158 pounds of chlorine exactly,
23 which leaves --

24 **Q.** I'm sorry. Let's go to the next email up. Sorry. I
25 misdirected you, Mr. Guevara.

1 No, I want to go to the one below that. Keep that one up
2 there, but there's one in the middle above. Yeah. Okay.

3 So the one from Mr. Maegerle is -- just going in order,
4 below, Mr. Liew referred to some numbers, apparently, on this
5 sheet and raised some chemical issues. And then what does
6 Maegerle say back, in laymen's terms?

7 A. Basically, I made a typo, typographical error, and instead
8 of writing 133.5, I actually wrote 187.

9 Q. Okay.

10 A. And the next --

11 Q. And then let's highlight the part, Mr. Guevara, that
12 corresponds to that. Just right in there. Okay.

13 So he says, used 133.5 but he wrote 187. And then what is
14 Mr. Liew's response, in laymen's terms?

15 A. Basically, he's saying if you get the numbers right, you
16 need 40 pounds per hour of aluminum and 158 pounds per hour of
17 chlorine. We had, actually, written 160, so there's only
18 2 pounds of excess chlorine leaving the generator, which is the
19 unreacted amount.

20 And then what he says is, "I'll change the number Al
21 chloride to 198 pounds an hour to correct for the number on the
22 flow sheet to make it right," basically.

23 Q. Okay. And did you study the later drawings that included
24 the mass balance tables to see their -- they ended up?

25 A. Yes, indeed, and these are the numbers they used on these

1 tables that I highlighted.

2 **Q.** So if I understand you correctly, Mr. Liew referred to
3 some numbers on this chart to say, "Hey, it looks like it
4 generates an excess amount of chlorine; and, Bob, it looks like
5 you got the molecular weight wrong"; is that true?

6 **A.** That's correct.

7 **Q.** And Bob then says, "Actually, it's a typo." It should --

8 **MR. AXELROD:** I object.

9 **THE COURT:** Is there a question in our future here?

10 **MR. GASNER:** There is.

11 **THE COURT:** All right. Let's get to it.

12 **MR. GASNER:** Okay.

13 **Q.** Could you summarize for the members of the jury just the
14 sequence of events that you perceived from the email chain that
15 we have as Exhibit 70?

16 **MR. AXELROD:** I'm going to object. The email is
17 there.

18 **THE COURT:** Sustained.

19 **MR. GASNER:** Let's move on.

20 **THE COURT:** We're wasting time now. Sustained.

21 **MR. GASNER:** Very well, Your Honor.

22 **Q.** Let's talk about the Diemer equation, alleged Trade
23 Secret 3. Have you reviewed Exhibit 162?

24 **A.** Yes, I have.

25 **MR. GASNER:** Your Honor, may I approach?

1 **THE COURT:** Yes, you may.

2 **BY MR. GASNER:**

3 **Q.** Do you have the Exhibit 162 in front of you?

4 **A.** Yes, I do.

5 **Q.** So what is this?

6 **A.** This is a report done by Mr. Sills in '94, which
7 correlates, which means he takes two numbers and compares them,
8 regarding the oxidation reactor model that had been developed
9 by Mr. Diemer in 1985, I believe the document was dated.

10 **Q.** And can you tell us, what's a model?

11 **A.** A model is a theory, a theoretical construct, because you
12 can't see what's going on inside the reactor. And, so, what
13 you do is, you try and create a model, just like a toy model or
14 something like that, which represents some of the things that
15 are going on inside the reactor. Specifically in this case it
16 relates to the slot that we were talking about earlier on.

17 **Q.** Have computer modeling techniques changed since 1993?

18 **A.** They have changed dramatically. The power of computers
19 has got so much greater. Today this would be done by programs
20 called computational fluid dynamics, which are very powerful
21 programs, and they can actually show you on a computer screen
22 what's actually going on inside a reactor.

23 **Q.** Has reactor design changed since the 1980s?

24 **A.** Oh, yes, absolutely. There's been dramatic improvements
25 in the reactors.

1 Q. What are some of those improvements?

2 A. The main ones are related to what we call
3 multiaddition-point reactors. They've got various names, star
4 reactors. Each of the companies has its own terminology.

5 And what that means is, instead of, as it described in the
6 USAPTI design, instead of only having one point where you add
7 the titanium tetrachloride, the $TiCl_4$, you have many points at
8 which you add it.

9 This gives you a number of very significant advantages in
10 terms of product quality and also throughput.

11 Q. Did you study the Diemer report and the Sills report as
12 part of your work in this case?

13 A. Yes, I did. I have to admit, it's a long time since I did
14 any FORTRAN programming, which is a computer language. And
15 there are some explanations of the terms he uses but -- I can
16 understand the equation, but the program itself, I really don't
17 understand.

18 Q. So Appendix B wasn't of any use to you?

19 A. None at all.

20 Q. And then in terms of the Sills report, at the front we
21 heard testimony about some of the tables in that report. Did
22 you study those?

23 A. Yes, I did.

24 Q. And Mr. Diemer said that -- or Dr. Diemer said that you
25 could design a reactor from this document. Do you agree?

1 **A.** No, I don't agree at all.

2 **Q.** Would this -- would you be better off designing a reactor
3 from scratch or with the help of this document?

4 **A.** As I said, this specifically relates to the slot area.
5 It's a section. I can't say the number, but a very small
6 section of the reactor. You've got to redesign the rest of the
7 reactor.

8 The -- some of the data in the tables is, actually,
9 straight out of the patents that we've already looked at today.

10 I went back last night and had a look at the data in the
11 table. And, in fact, you can make a very good approximation to
12 what is called the slot width from very basic chemical
13 engineering. It wouldn't get you exactly there, but it would
14 get you very close.

15 **Q.** Is it your opinion that Exhibit 162 would have any value
16 to a person designing a TiO₂ plant?

17 **A.** None at all.

18 **Q.** How about alleged Trade Secret 2? Is it your opinion that
19 this would have any value to a person designing a titanium
20 dioxide project?

21 **A.** No. It's absolutely specific to the Edgemoor plant, which
22 is a single-product plant. Nobody does this like this.

23 **Q.** Let me ask you about alleged Trade Secret 5, which we've
24 referred to during the trial as the Basic Data Manual.

25 Have you reviewed that?

1 **A.** Yes, I have.

2 **Q.** Can you tell us your perception of how it compares to
3 other documents similar to it that you've seen in your career?

4 **A.** This is, in my opinion, something I may have done very
5 early as a concept. It is not useful at all to design a
6 chemical plant. There is insufficient data in it. The main
7 benefit to it is it refers to a large number of DuPont
8 drawings, which are not included in the manual.

9 So if you had the whole DuPont drawing office available to
10 you, yes, you could say, yes, it might be valuable. But, in
11 general, because you don't have those drawings, it's valueless.

12 **Q.** We heard some testimony during the Government's
13 case-in-chief about overlaps between words and phrases and
14 numbers in parts of the Basic Data Manual compared to certain
15 emails, some of which we've gone over today.

16 Do you recall reading that testimony?

17 **A.** Yes, I have.

18 **Q.** Do you agree that there was some overlap in language?

19 **A.** There are a few.

20 **Q.** Do you ascribe any significance to that?

21 **A.** None at all because they -- the ones that I reviewed, in
22 fact, were very different to the final numbers used by USAPTI.

23 **Q.** And the Basic Data Manual that has been discussed in this
24 case dates back to 1985?

25 **A.** That is correct.

1 Q. And what technological advances have there been in TiO₂
2 design since 1985?

3 A. The main one is the plants have got a lot bigger. So this
4 was designed for X tons per year. Plants are not built at that
5 size anymore.

6 The reactor development are tremendously different. The
7 finishing plant changes, particularly around the area of
8 washing and drying, micronizing, have all changed.

9 Chlorination is somewhat stable in terms of design, but they
10 have got a lot bigger when they're associated with a TiO₂
11 plant.

12 The scrubbing systems have got more complicated because of
13 various environmental regulations. So, essentially, there's
14 been a huge amount of change in the industry from the '80s.

15 Q. If you were designing a titanium dioxide plant in 2006 or
16 later, would you want to have a copy of this Basic Data Manual
17 as a reference?

18 A. No. It's useless to me.

19 THE COURT: All right. Is this a good time to break?

20 MR. GASNER: Absolutely.

21 MR. AXELROD: Your Honor, may we have a brief sidebar?

22 THE COURT: Sure. Well, can we take -- the jury
23 doesn't have to be here during this.

24 MR. AXELROD: No, but it's a scheduling issue so it
25 may be useful.

1 **THE COURT:** All right. You can stand. You'll be
2 getting a break in about two minutes.

3 **MR. HEMANN:** Your Honor, it's just scheduling. We may
4 not need the court reporter. It's just a scheduling issue.

5 **THE COURT:** All right. Madam Court Reporter, you can
6 stay where you are.

7 **THE REPORTER:** Thank you, Your Honor.

8 (Sidebar conference heard but not reported.)

9 **THE COURT:** All right. So we are going to take our
10 break. And remember the Court's usual admonitions, and keep an
11 open mind and don't discuss the case. And we'll see you in 15
12 minutes.

13 Did you get more caffeinated coffee?

14 (Laughter)

15 **THE COURT:** Good. Thank you very much. We tried.
16 Thank you.

17 (Proceedings were heard out of the presence of the jury:)

18 **THE COURT:** 15 minutes, ladies and gentlemen.
19 You may step down, sir.

20 **THE WITNESS:** Thank you, Your Honor.

21 (Recess taken at 9:45 a.m.)

22 (Proceedings resumed at 10:08 a.m.)

23 (Proceedings were heard out of the presence of the jury:)

24 **THE COURT:** All right. Please bring in the jury.

25 (Proceedings were heard in the presence of the jury:)

1 **THE COURT:** All right. Please continue.

2 **BY MR. GASNER:**

3 **Q.** Mr. Cooper, we're in the home stretch of your direct
4 testimony, and I promise I'm not going to go through all the
5 patents on this chart that I've got here, but I do want to ask
6 you about the number of patents you reviewed.

7 Did you write a report in this case?

8 **A.** I did.

9 **Q.** And in that report, did you cite patents in the course of
10 memorializing your opinions?

11 **A.** Yes, I did.

12 **Q.** And did you review your report to figure out the specific
13 patents that are referenced in the body of your report?

14 **A.** Yes, I did.

15 **MR. GASNER:** Your Honor, may I approach?

16 **THE COURT:** Yes. What are you going to show him?

17 **MR. GASNER:** I'm just going to give him a copy of his
18 report for reference.

19 **THE COURT:** Very well.

20 **BY MR. GASNER:**

21 **Q.** So you've got a full copy of your report, which has the
22 report on the top and then various appendices; is that right?

23 **A.** Correct.

24 **Q.** And can you tell the members of the jury what's in the
25 appendices?

1 **A.** The appendices list all the references I used to develop
2 my opinions for the report.

3 **Q.** In preparation for your testimony, did you have a chance
4 to go through with some help from our paralegals and put
5 together the list of patents that are referred to in your
6 report?

7 **A.** Yes, I did.

8 **MR. GASNER:** And I'm showing you a chart that we can
9 mark for identification as the next in order. And I believe
10 it's 4,000 something.

11 **THE CLERK:** I don't know, because they're out of
12 order.

13 **MR. GASNER:** Okay. So we'll provide the next
14 demonstrative exhibit number in order.

15 **Q.** Is this an accurate copy of the list that you prepared
16 with some help from our paralegals?

17 **A.** Yes, it is.

18 **Q.** And, roughly, how many patents are on there?

19 **A.** There's about 180.

20 **Q.** And in your report, did you just kind of splatter them out
21 there or did you do more than that?

22 **A.** No. These are specifically referred to in my report. I
23 reviewed a lot more than that, but they weren't included in my
24 report.

25 **Q.** Okay. As I said, we're not going to go through it, but I

1 just wanted to just memorialize for the record the identity of
2 the patents that you did review.

3 I want to switch gears and talk about confidentiality
4 practices, both in terms of the effectiveness, in your opinion,
5 of DuPont's and your own practice in terms of reconciling
6 different obligations. So those are two areas I want to talk
7 about, but let's talk about your background in each of those.

8 So, first, with respect to DuPont's confidentiality
9 practices, have you studied the testimony and exhibits in this
10 case as to DuPont's confidentiality practices?

11 A. Yes, I have.

12 Q. And in the course of your -- is it 44 years in the
13 industry?

14 A. That's correct.

15 Q. -- have you encountered former DuPonters working for other
16 companies?

17 A. Yes, I have.

18 Q. Have you dealt with, in your own companies, with the issue
19 of what ex-DuPonters are allowed to talk about in their
20 dealings with your various employers over the years?

21 A. Yes, I have.

22 Q. In terms of your own practices, have you signed
23 confidentiality agreements of your own?

24 A. Yeah, about 10 or a dozen in total.

25 Q. Have you, in your various positions in the industry,

1 negotiated confidentiality agreements with vendors, for
2 example?

3 **A.** Not vendors as such, but the engineering contracting
4 companies. I was involved with two major ones.

5 **Q.** And have you looked at vendor contracts in the course of
6 your responsibilities over the last 44 years?

7 **A.** Yes, I have.

8 **Q.** Have you become familiar with the different
9 confidentiality terms used in the TiO2 industry over your last
10 44 years in the business?

11 **A.** Yes, I have.

12 **Q.** So let's talk about the confidentiality agreement that you
13 had with SCM. Do you recall the terms of that?

14 **A.** Yes, I do.

15 **Q.** Can you tell the members of the jury, what were those
16 terms?

17 **A.** In the case of, in fact, it was Millennium the last one I
18 signed, basically they say you shall not reveal trade secrets.
19 It's a very bold statement. No definition of what a trade
20 secret is. No time scale, no nothing. It just says, "You will
21 not reveal trade secrets."

22 **Q.** And after you left Millennium, did you go on to work in
23 consulting arrangements for other companies?

24 **A.** Yes. I've done about 10 of those.

25 **Q.** And how did you, in your own experience, reconcile your

1 obligation to your former employers not to reveal trade secrets
2 with the work that you did for many other employers thereafter?

3 **A.** It is difficult; but when I was asked the question by
4 another judge, in fact, I said: There are certain things that
5 are obviously secret. There are things that are obviously not.
6 The area in between is huge, and you just have to use your own
7 personal discretion and ethics on how you can work it.

8 **Q.** To the extent that DuPont has made a variety of efforts
9 through policies and manuals, and all the documents you look at
10 to maintain absolute confidentiality surrounding everything it
11 does in its titanium dioxide plants, do you believe that's been
12 effective in your experience?

13 **MR. AXELROD:** Objection.

14 **THE COURT:** Sustained.

15 **BY MR. GASNER:**

16 **Q.** Do you have an opinion, generally, as to whether policies
17 alone can be effective to protect everything a company does?

18 **MR. AXELROD:** Objection.

19 **THE COURT:** Sustained.

20 **BY MR. GASNER:**

21 **Q.** In the course of your time at Ashtabula 1 back in
22 Ashtabula, Ohio, did you come to learn about the business deal
23 in which DuPont built a plant for Sherwin-Williams at that same
24 site?

25 **A.** Yes, I did.

1 Q. How did you become familiar with that?

2 A. There was still people at Ashtabula 1, when I went there
3 in '87 and '89, who were present at or very shortly after the
4 acquisition of the plant by SCM Chemicals, and they told me all
5 about it.

6 Q. Was that important to know as part of your
7 responsibilities?

8 A. Not really. It was just a time line for me at that time.

9 Q. So in terms of the time line, what do you mean by that?

10 A. The important thing for me was that there clearly was some
11 time limitation about using the technology out of SCM Plant 1
12 and the rest of the plants, and that time line had expired,
13 that time limitation. So we felt free to use all that
14 technology in our other plants, which we did.

15 Q. Did you ever have occasion to look at the actual agreement
16 between DuPont and Sherwin-Williams as part of your
17 responsibilities?

18 A. Not at that time.

19 Q. Have you reviewed it in preparation for your testimony?

20 A. Yes, I have.

21 MR. GASNER: Your Honor, may I approach the witness?

22 THE COURT: Sure. You may approach the witness.

23 MR. GASNER: Thank you.

24 BY MR. GASNER:

25 Q. Upon your review of the Sherwin-Williams contract, did you

1 find any sections of it that squared with your understanding of
2 the time line for confidentiality back when you were employed
3 at Ashtabula?

4 **A.** Yes, there was --

5 **THE COURT:** Just a moment. I have to rule -- there's
6 an objection coming.

7 **MR. AXELROD:** Objection, Your Honor.

8 **THE COURT:** Sustained. The jury will disregard the
9 last answer.

10 **MR. GASNER:** Your Honor, Exhibit 900 has been admitted
11 into evidence.

12 **THE COURT:** Right.

13 **MR. GASNER:** Simply for demonstrative purposes, may I
14 ask the witness questions about this?

15 **THE COURT:** I only rule on one question at a time.
16 So, again, I don't give advisory opinions. So ask the question
17 and then I'll rule on the objection, if there is one.

18 **MR. GASNER:** Permission to display 900, which has been
19 admitted?

20 **THE COURT:** No -- yes, of course, you can. It's been
21 admitted. First of all, it's formally offered and admitted;
22 correct?

23 **MR. GASNER:** Yes.

24 **THE COURT:** So, of course, you can display an admitted
25 document.

1 **MR. GASNER:** Mr. Guevara, can we display
2 Exhibit 900 --

3 **MR. AXELROD:** Your Honor, I'm sorry. I believe this
4 was the subject of discussion about how this -- about this
5 particular exhibit.

6 **THE COURT:** Well, there was, but it's in evidence, so
7 he can certainly display it. The issue may arise if questions
8 are asked about it.

9 **MR. AXELROD:** I understand.

10 **THE COURT:** I understand what we discussed.

11 **MR. AXELROD:** Thank you, Your Honor.

12 **MR. GASNER:** Let's go to the page, it's page 900-14,
13 Mr. Guevara, and if you could blow up Article XI.

14 **Q.** And do you see the portion that refers to a 15-year period
15 for confidentiality?

16 **MR. AXELROD:** Objection.

17 **THE COURT:** Sustained.

18 **BY MR. GASNER:**

19 **Q.** What was your understanding when you worked at SCM as to
20 how long the period of confidentiality was?

21 **MR. AXELROD:** Objection.

22 **THE COURT:** Sustained.

23 **MR. GASNER:** No further questions, Your Honor.

24 **THE COURT:** Thank you.

25 Ladies and gentlemen, what we're going to do, we're about

1 to have cross-examination. It's going to take a while to set
2 up; and rather than have you here and even stretching, I'm
3 going to -- we're going to give you a little bit of a break
4 here of about 30 minutes.

5 So it's about 20 after 11:00 -- 20 after 10:00, excuse me,
6 and we'll break until 10 of 11:00. And then we'll continue on;
7 and we'll take another break, don't worry, before the end of
8 the day. But I think it's more efficient to give counsel a
9 chance to set up, and we have some administrative matters to
10 take care of.

11 So 30-minute break, remembering the usual admonitions, and
12 we'll see you in 30 minutes.

13 (Proceedings were heard out of the presence of the jury:)

14 **THE COURT:** You may take a break as well, sir.

15 **THE WITNESS:** Thank you, Your Honor.

16 **THE COURT:** All right. 30 minutes.

17 **MR. AXELROD:** Thank you, Your Honor. Thank you for
18 the additional time.

19 **THE COURT:** Of course.

20 (Recess taken at 10:20 a.m.)

21 (Proceedings resumed at 10:53 a.m.)

22 (Proceedings were heard out of the presence of the jury:)

23 **THE COURT:** All right. Are we ready for the jury?

24 **MR. AXELROD:** Yes, Your Honor. Thank you so much.

25 **THE COURT:** All right. Bring out the jury.

(Proceedings were heard in the presence of the jury:)

THE COURT: All right. Please be seated. I hope you enjoyed your extended break and got a little chow in. Something smelled good out in the hall, so I'm sure you had a good time, but probably not enough time.

Let's proceed with cross-examination.

MR. AXELROD: Very well, Your Honor.

MR. GASNER: Your Honor, briefly for the record, the demonstrative that we last showed was Number 4011.

THE COURT: Thank you very much.

THE CLERK: Thank you.

(Trial Exhibit 4011 marked for identification)

MR. AXELROD: Thank you, Your Honor. May I proceed?

THE COURT: Yes, you may.

CROSS-EXAMINATION

BY MR. AXELROD:

Q. Mr. Cooper, good morning.

A. Good morning.

Q. I'd like to talk to you about your experience in designing new lines and new plants at SCM and Millennium. I know that you had said you had worked on a number of major projects there; right?

A. That's correct.

Q. And you -- I kind of want to go over them with you.

Could you just sort of walk us through -- I think you said

1 there were about four major projects that you designed?

2 **A.** That's correct.

3 **Q.** Could you just sort of briefly describe which ones they
4 were and what your role was?

5 **A.** 1985 was the oxidation replacement project where we
6 replaced the whole oxidation unit at Stallingborough in the UK.

7 The second one was the conversion at the West Australian
8 plant, 2007, where we took a sulfate plant and built a new
9 front end, which is the TiCl plant, oxidation plant, gas
10 scrubbing, waste treatment plant.

11 The third project in 1989, which was building the second
12 line at Ashtabula 1 plant.

13 And the fourth major project was at Ashtabula 2 where we
14 increased the capacity of the plant by about 50 percent.

15 **Q.** And when was that one?

16 **A.** That was '91 through '95.

17 **Q.** Okay. So the first one was in Stallingborough. That was
18 in '85, this oxidation replacement?

19 **A.** Correct.

20 **Q.** And what was your role in that?

21 **A.** I was the process engineer for it.

22 **Q.** Okay. And, so, what did that require you to do? What did
23 you do?

24 **A.** I ran a team of contractors. I provided all the
25 basic data to draw the process flow diagrams, the piping and

1 instrumentation drawings, the equipment process specifications,
2 the instrument specifications, the interlock schedules; and
3 also I led the HAZOP, which is the safety assessment of the
4 plant, and then I assisted with the commission of the plant.

5 Q. Okay. And the second one, the Western Australia plant,
6 was in '87?

7 A. It started in '87, yes.

8 Q. And that was, basically, a new plant you were building?

9 A. We had an existing sulfate plant in Western Australia, so
10 we retained the finishing plant and built what is called a
11 front end, which is a $TiCl$ plant, oxidation plant, gas
12 scrubbing, waste treatment, and all the utilities on a new
13 site.

14 Q. And that was a chloride route project?

15 A. Correct.

16 Q. Okay. What was your role in that project?

17 A. I started off as the lead process engineer.

18 Q. Okay.

19 A. Again working and leading a team of contract engineers to
20 do all the process engineering stuff, process flow diagrams,
21 piping and instrumentation diagrams, control diagrams,
22 specifications, equipment; and that one we also did a hazard
23 and operability study because it was requested by the West
24 Australian Government, of about 23 weeks.

25 Q. Okay.

1 **A.** Then when we went to Australia, I took over as part of
2 doing the instrumentation because the instrumentation was late,
3 and then part of the commissioning team to actually start up
4 the plant. Then I was left behind to close out the site as
5 essentially -- they don't call it a close-out manager, but
6 that's what it is, shut down all the construction activities.

7 **Q.** And then in '89 you said you were involved in the
8 Ashtabula 1 doing a second line there?

9 **A.** That's correct.

10 **Q.** So what was your -- so this was -- on the design part of
11 it, what was your job function?

12 **A.** It started off purely to review the designs that were
13 being done by others. It was very quickly realized that the
14 designs were not of the latest that we'd included in both the
15 UK plant and the Western Australian plant. So I took over the
16 oxidation process design, all the instrumentation design apart
17 from the computer itself, and ultimately became, not officially
18 but actually, the assistant project manager.

19 **Q.** And the last project you mentioned was this expansion at
20 Ashtabula 2. Was that a new line?

21 **A.** No. We had a very large TiCl plant, much larger than was
22 required; and, so, we actually redesigned the oxidation and
23 finishing lines to take, basically, the spare capacity that was
24 available from the TiCl plant.

25 **Q.** What was your role in that project?

1 A. I led the team.

2 Q. Okay. And I gather that on any of these projects, you're
3 constantly wanting to improve the process?

4 A. That is correct.

5 Q. Okay. So you start with a process; and then if you learn
6 things as you go and you can make improvements, you incorporate
7 them into the next set of designs?

8 A. No, that is not quite right.

9 Q. Okay.

10 A. We'd already completed the new design at Stallingborough,
11 which was the latest and greatest, so the revisions you make
12 are to the details of the design.

13 Q. Understood.

14 So you -- all of these projects are sort of major chemical
15 designs; right? The four projects that we just talked about?

16 A. Oh, yes. They're all in excess of a \$100 million.

17 Q. And the USAPTI and performance projects were also major
18 designs; right?

19 A. With the work that I did, we went fully through to the
20 construction drawings.

21 Q. Okay.

22 A. Okay. So we, actually, went right through, and in the end
23 we were responsible for building the plants.

24 Q. Okay. But designing a hundred-thousand-ton plant, that's
25 a big project; right? That's a major chemical design project?

1 A. Depending on what stage you go to.

2 Q. Okay. Well, let's talk about sort of the starting point.
3 There's, in any major chemical design, there's a normal
4 progression; right?

5 A. Correct.

6 Q. Okay. And in that progression, I think you mentioned this
7 yesterday, you start with a set of numbers; right?

8 A. You develop a set of numbers. Actually, that's not the
9 first thing you do. The first thing you do is, you start with
10 an outline process description which specifies the basics of
11 the process.

12 Q. Okay. Well, you know, you did -- you said yesterday it
13 was a normal major progression in any major chemical design to
14 start with a set of numbers; right?

15 A. I believe I said it was a process description I started
16 with.

17 Q. Okay. So I'm just reading --

18 A. They do contain some numbers.

19 Q. Okay. And you said that, for example, for Western
20 Australia and for Stallingborough, you provided all the
21 basic data, the process flow diagrams, the P&IDs; right?

22 A. That is correct.

23 Q. Okay. So I just want to sort of explore with you the
24 dataset that you start with. Okay?

25 So could you describe, when you sat down to design the

1 Western Australia plant, what was the body of information that
2 you started with?

3 **A.** The first thing you start with is an agreement about what
4 the capacity of the plant is going to be and what product it's
5 going to produce.

6 You develop a document, which I call a process design
7 brief, which has the raw material, specifications, the utility
8 specifications, the total throughput of the plant, any design
9 safety factors, any throughput safety factors that you're going
10 to incorporate in the design. That document is available as
11 the sort of reference document to the basics of what then
12 follows.

13 **Q.** And, so, it includes raw materials, utilities, your total
14 throughput; right?

15 **A.** Correct.

16 **Q.** Any other design criteria or information?

17 **A.** Yes. Usually if you're building on another site, okay,
18 you'll have all the site details, location. You need
19 seismographical data, earthquake zone -- because you have to
20 design to earthquake zones -- maximum wind speed, maximum and
21 minimum atmospheric temperatures. Everything that forms a
22 background to the design.

23 **Q.** Do you also -- does it include anything else?

24 **A.** Usually it includes a list of the regulations you're going
25 to use, a list of the units; in other words, if we're designing

1 in the States, we design feet and inches, pounds per square
2 inch. In Australia it would be fully metric -- sorry, SI, not
3 metric. Those are all specified in this document so
4 everybody's got it for reference.

5 Q. Okay. And would it include information -- I assume that
6 that's a document that's also used to get funding for the
7 project?

8 A. No.

9 Q. It's not?

10 A. No.

11 Q. Okay. So the people who are making decisions about
12 whether to proceed with this project, they've already made that
13 decision?

14 A. Yes.

15 Q. Okay. And what information are they relying on when they
16 make that decision?

17 A. Surprisingly, the ones that I've done usually end up about
18 five pages that go to the Board of Directors. It will have the
19 throughput, number of tons produced. It will particularly have
20 a marketing support document.

21 Q. How much did you say these projects were?

22 A. About a hundred million.

23 Q. Okay. So you're saying that the people making the
24 financial decisions on a hundred-million-dollar expenditure are
25 relying on a five-page document?

1 A. The Board of Directors that approve it, yes.

2 Q. Okay.

3 A. The chief executive officer will have had a number of
4 briefings with the team that's proposing the project. He will
5 have a lot more information, but the actual submission within
6 SCM was probably five pages and mainly dealing with profit and
7 loss projections.

8 Q. Okay. Well, so, when you started the Western Australia
9 project, you had this process design brief; right?

10 A. Correct.

11 Q. And then you had PFDs?

12 A. That's the next thing you do, correct.

13 Q. Okay. And to create your PFDs, did you start from
14 scratch?

15 A. For the Western Australian job, yes.

16 Q. And when you started from scratch, did you use any of the
17 information that was available to SCM, or do you just start out
18 with a clean piece of paper and start writing?

19 A. For the Western Australian job, it was a clean piece of
20 paper.

21 Q. And, so, you didn't incorporate any of the information
22 that was available to SCM or Millennium about how to build on
23 the prior experience of the company?

24 A. In the terms of the process flow diagram, that is correct.

25 Q. Well, how about with respect to the rest of the

1 information you used to start this process?

2 **A.** The start of that process starts with the raw materials
3 specifications. So we would go and determine which ore we were
4 going to use, which coke we were going to use, whether we were
5 going to have an on-site chlorine supply or a delivered
6 chlorine supply, whether we were going to have our own oxygen
7 and nitrogen plant, whether we were going to do our own waste
8 disposal or contract it out. When you've got that, then you do
9 a process flow diagram which includes a schematic of the
10 process you're going to use.

11 **Q.** And the schematic that you used for Western Australia, was
12 that built on the prior knowledge of SCM or Millennium?

13 **A.** Yes. It was based on -- part of it was based on the UK
14 plant.

15 **Q.** Okay. And, so, was the UK plant a basis, a starting
16 point, for those sketches?

17 **A.** For the oxidation unit, yes.

18 **Q.** Okay. And how about for chlorination?

19 **A.** No. That was a complete start-from-scratch design.

20 **Q.** So despite the fact that there were other chlorination
21 units in operation at the plant, you didn't look at any of that
22 information?

23 **A.** I used my knowledge and when I visited around. Yes, we
24 put -- in my mind, we put together what it was probably going
25 to look like.

1 Q. Well, understood. And when you did that, you looked at
2 what you were aware of and the information you had available to
3 you working there; right?

4 A. That is correct.

5 Q. Okay. So you had access to information about the
6 chlorination process that was used in your company; right?

7 A. That is correct.

8 Q. And you used that to start the process in Western
9 Australia?

10 A. That is correct.

11 Q. Okay. So that's chlorination and oxidation.

12 And, of course, that makes perfect sense because you want
13 to build off of the experience that your company already has;
14 right?

15 A. Yes.

16 Q. And you yourself in particular at the company were keen on
17 improving the technology; right?

18 A. That's a difficult question to answer. Obviously, you
19 want to build the best that you can; but one of the things that
20 you have always to bear in mind about these plants is that
21 they, frankly, are extremely dangerous, and it is often best to
22 go with what you know, what has been proven in practice, rather
23 than put new stuff in it.

24 Q. Okay. So if something's been proven over time, that's
25 something you would go with?

1 **A.** Yes.

2 **Q.** Okay. Now, when you started out -- so you have this
3 process design brief. It sounds like -- and for these
4 drawings, for oxidation and chlorination that we were just
5 talking about, were those the PFDs?

6 **A.** That's what you start with, yes.

7 **Q.** Okay. So the PFD for oxidation was based off of
8 Stallingborough?

9 **A.** That is correct.

10 **Q.** Okay. Did you consider or use, in creating that PFD,
11 oxidation from any of the other plants?

12 **A.** At that time, no, because it was a different size of
13 plant. Stallingborough was the nearest size of plant, so it
14 was predominantly -- the oxidation unit was predominantly based
15 on Stallingborough.

16 **Q.** Okay. And for chlorination -- I'm sorry, what did you
17 start -- what did you use as your basis? I think you indicated
18 you used information that you had from the company's practices.
19 Could you elaborate?

20 **A.** Yes. We had some from the Stallingborough plant, and some
21 of the information came out of our Hawkins Point plant.

22 **Q.** That's the one in Baltimore?

23 **A.** That's the one in Baltimore. That was more difficult
24 because that was a much smaller plant.

25 **Q.** Okay.

1 **A.** But some of the ideas we did use from that plant.

2 **Q.** Any other places for ideas within the company for starting
3 up PFDs?

4 **A.** Not at that time.

5 **Q.** Okay. And, so, you have that information. So is that --
6 would it be fair to say that's what you sat down with to start
7 drafting the PFDs?

8 **A.** I started with what I knew because I was doing the design.

9 **Q.** Okay.

10 **A.** And, yes, you are correct.

11 **Q.** Okay. So you didn't sit down with a bunch of patents and
12 a pad of paper, did you?

13 **A.** No, I did not.

14 **Q.** And you didn't sit down with a bunch of textbooks?

15 **A.** Yes, I did, on some occasions.

16 **Q.** Okay. Did you refer to Barksdale to do those?

17 **A.** No, I don't use Barksdale.

18 **Q.** Okay. Now, you also mentioned yesterday that these major
19 design projects were all team projects, not one person; right?

20 **A.** That is correct.

21 **Q.** Okay. And I want to go -- I want to focus for a moment
22 with you on the project in Western Australia. You designed
23 that plant; right? I know it's just the front end, it was the
24 chlorination and oxidation. It wasn't the finishing part;
25 right?

1 **A.** That is correct.

2 **Q.** But you designed that?

3 **A.** Yes, I did.

4 **Q.** Okay. Could you talk about, sort of by the team -- who
5 was involved in that team?

6 **A.** The team consisted of a project manager who oversaw the
7 project; one process engineer, myself.

8 **Q.** That was you?

9 **A.** Uh-huh.

10 **Q.** Okay.

11 **A.** Two mechanical engineers, two instrument engineers was the
12 team that SCM put together.

13 We then hired a contractor who had approximately, I think
14 it was, two process contract engineers, two project engineers,
15 one instrument engineer, and then a few specialized engineers
16 very much part time.

17 **Q.** Okay. What were the specialized engineers doing?

18 **A.** Things like refractory. There's a discipline called
19 "rotating machinery" who design the pumps.

20 **Q.** Okay.

21 **A.** And then we had some, in those days, draftsmen who
22 actually drew the drawings.

23 **Q.** Okay. So -- and could you explain the relationship
24 between the SCM team and the contractors for this design?

25 **A.** In this particular case, the two process engineers had

1 worked with us at Stallingborough.

2 Q. The contractors?

3 A. Yes. The rest of the team was new, and they provided that
4 discipline expertise. They didn't know anything about the
5 process.

6 Q. I'm sorry. But they worked with you at Stallingborough,
7 so they had --

8 A. The process engineers were different. They had worked
9 with us at Stallingborough so they knew.

10 Q. Oh, I'm sorry. I apologize. You were talking about the
11 project engineers?

12 A. I was talking about the process engineers.

13 Q. Okay. I think I lost you there. So could you please say
14 that again?

15 A. Yeah. The two process engineers that we worked with had
16 worked on the Stallingborough job. So they were familiar with
17 the process.

18 Q. Okay.

19 A. The rest of the contract engineers were, essentially, new
20 to the team, and they didn't know anything about the process.

21 The draftsmen were what we call "job shoppers"; in other
22 words, we hired them in for the job and then they would be let
23 go at the end of this job.

24 Q. Okay. And this -- the team that you're talking about, the
25 SCM team and the contractors, they worked on the design from

1 the beginning until the end?

2 **A.** In the first stage, which is what is called the front-end
3 engineering design, it's a relatively small team. You know, we
4 were seven, thereabouts. The contract team would have their
5 own project manager, probably the same number of engineers, and
6 then the draftsmen to do the package.

7 When you get into the detail design, we went from a team
8 of seven contractors to over 200.

9 **Q.** Okay. And, so, the detail design is doing the detail
10 design drawings, the equipment specifications, things like
11 that?

12 **A.** No. The equipment specs are already done.

13 **Q.** Okay. So would detail design drawings be part of the
14 detail design part that you're just describing?

15 **A.** Yes.

16 **Q.** So you had 200 contract engineers.

17 And would that, once -- is detail design the end of the
18 process for designing?

19 **A.** It depended on which specific job; but, generally, that
20 was the case.

21 **Q.** Okay. So using this Western Australia example, the new
22 plant there, you start out, on the SCM team you've got a
23 project manager; right?

24 **A.** Correct.

25 **Q.** There's a process engineer, one process engineer?

1 **A.** Correct.

2 **Q.** Two mechanical engineers?

3 **A.** Correct.

4 **Q.** Two instrumentation engineers?

5 **A.** Correct.

6 **Q.** Okay. So that's six people?

7 **A.** Yes. And we had one secretary.

8 **Q.** Okay. Engineer or some support person?

9 **A.** No, secretary, support.

10 **Q.** Okay. And then at the start, you have a team of
11 contractors. You've got two process engineers who worked with
12 you in Stallingborough, and then a team of people that hadn't
13 worked with you before, two project engineers, an instrument
14 engineer, and then some specialists in various subject matters?

15 **A.** That is correct.

16 **Q.** Okay. And after you get through the feed stage, you start
17 out with that team for feed; and then after, when you get to
18 the detail design, you bring in 200 more people?

19 **A.** Not all at once. That was the peak number for the
20 project.

21 **Q.** Okay.

22 **A.** You start with the same team, basically, if you can, that
23 have completed the feed. Then as the workload increases, you
24 increase the number of staff on the project.

25 **Q.** So what's the very first stage of feed?

1 **A.** As I said, the process design brief.

2 **Q.** Okay. And then things like PFDs and --

3 **A.** P&IDs is the next thing.

4 **Q.** -- P&IDs?

5 Okay. And the feed ends at what point? Is there a set of
6 drawings that sort of defines the outer bounds of the feed
7 process?

8 **A.** Yes, there is.

9 **Q.** And what is it?

10 **A.** It will be the process design brief, the PFDs, P&IDs, the
11 process description, the outline control system -- not the
12 details, just the outline -- process specification sheets for
13 equipment, process specification sheets for instruments. And
14 on certain equipment, we would go to the next level of a little
15 more detail in the drawings.

16 Then we would also have, in this particular case, the
17 safety interlock systems, the pressure release systems, the
18 environmental regulation. Basically, it's a brief that goes to
19 the Government to say what we're doing.

20 **Q.** You said there were, for certain equipment, you would do
21 detailed drawings?

22 **A.** Not full detail drawings, but more detail than a process
23 specification sheet.

24 **Q.** For which pieces of equipment?

25 **A.** These would be the chlorinator. In this particular case,

1 that was all we did.

2 Q. You didn't do it for the oxidation reactor?

3 A. No, we didn't.

4 Q. Would you typically do it there for an oxidation reactor?

5 A. Yes and no. We've done it both ways.

6 Q. Okay. And I want to -- I want to -- I want to make sure
7 I've got this, so I want to write this down.

8 (Pause in proceedings.)

9 BY MR. AXELROD:

10 Q. My handwriting is not great, but that says
11 "West Australia."

12 A. I can read that.

13 Q. Okay. Good.

14 So the first person you described for the -- and this was
15 an SCM project, right, or was it Millennium at that point?

16 A. This was still SCM.

17 Q. Okay. You said a project engineer; right?

18 A. Project manager.

19 Q. Project manager. Excuse me.

20 And then you said there was a process engineer; right?

21 A. Correct.

22 Q. And then you said there were two mechanical engineers?

23 A. Correct.

24 Q. And I'm just going to put "ME" here for short for
25 mechanical engineer.

1 **A.** Okay.

2 **Q.** Okay. And then you said two instrumentation engineers?

3 **A.** Correct.

4 **Q.** Okay. And that's the SCM part of it. And then we've got
5 the contractors; right?

6 **A.** Correct.

7 **Q.** Pardon me for turning my back.

8 And for that we've got two process engineers.

9 **A.** May I correct you? You've got a project manager.

10 **Q.** Oh, project manager for that, too; right?

11 **A.** Oh, yes.

12 **Q.** Okay. One project manager, two process engineers, one
13 instrumentation. And then you said you had some specialists;
14 right?

15 **A.** Right.

16 **Q.** About how many?

17 **A.** If you call it full-time equivalents, because they were in
18 and out all the time --

19 **Q.** Right.

20 **A.** -- one.

21 **Q.** Okay. I'll put one FTE, full-time equivalent specialist.

22 And then you have some draftspeople?

23 **A.** That is correct.

24 **Q.** How many?

25 **A.** Three, maybe four at that time.

1 Q. So let's talk about the project manager. Who was it?

2 A. He was a manager actually that we'd hired for the
3 Stallingborough job specifically. He was ex-Kronos. He was a
4 mechanical engineer.

5 Q. Okay. So he was -- what was his -- what was his name?

6 A. Oh, Bill Allen.

7 Q. Bill Allen. And he was an ME, mechanical engineer?

8 A. Yes.

9 Q. How many years in the business?

10 A. I don't know how long he worked for Kronos, but with us he
11 started in '85 with the project, Stallingborough.

12 Q. When he started in '85, I mean, do you have some sense --
13 I gather you worked with him; right?

14 A. Yeah. He probably worked for Kronos for maybe 10 years.

15 Q. Okay. And this project was in '87; right?

16 A. Yes.

17 Q. So he had at least about 12 years in the business?

18 A. I believe so, yes.

19 Q. Okay.

20 A. I'm not a hundred percent sure.

21 Q. And that's 12 years in the TiO2 industry?

22 A. Yes.

23 Q. Okay. Working on chloride route?

24 A. No.

25 Q. Okay. This was his first chloride-route project?

1 A. Stallingborough was his first chloride-route project.

2 Q. So when he worked at Kronos, it wasn't chloride route?

3 A. I don't believe he was working on chloride route at that
4 time.

5 Q. The process engineer, who was that?

6 A. Me.

7 Q. Okay. And you're a chemical engineer?

8 A. Chemical engineer.

9 Q. So I'm going to put CE for that?

10 A. CNG is better.

11 Q. I'm, sorry, what's that?

12 A. CNG is better.

13 Q. Well, this is as good as it gets here.

14 A. Because that's civil engineer.

15 Q. I'll just leave it at that for now.

16 A. Okay.

17 Q. At the time you had done that project, how long had you
18 been in the TiO₂ business?

19 A. I started in '69, so that's '70 -- 28 years.

20 Q. 28 years. And that 28 years all chloride route?

21 A. All chloride.

22 Q. Okay. Now, you said there were two mechanical engineers.
23 Who?

24 A. Correct.

25 Q. So tell me who the first one was.

1 A. Bob Daniels.

2 Q. Okay. And what was Mr. Daniels' background? What kind of
3 engineer?

4 A. Chemical engineer, actually.

5 Q. Okay. And how long had he been in the business?

6 A. At that time, two.

7 Q. Two, okay. Two years.

8 And who was the other mechanical --

9 A. Bob Waddington.

10 Q. What was his background?

11 A. He was originally pharmaceuticals. Then he joined the
12 company on the sulfate plant, I want to say, in the mid-'70s.

13 Q. Okay.

14 A. Chloride, actually, nil.

15 Q. Okay. But educationally what was his background?

16 A. Oh, mechanical engineer.

17 Q. Okay. And he'd been in the TiO₂ business how long?

18 A. I want to say he joined the company in 1975 on the sulfate
19 plant. So that would be 22 years total TiO₂. Chloride -- this
20 was his second chloride job. So that would have been two years
21 as well.

22 Q. Okay. So, I'm sorry, this -- you said he joined in '75?

23 A. Yes.

24 Q. And this we're talking about, what year was the project?

25 A. Sorry -- yes, that's right, '75. This project was '87.

1 Q. So 12 years?

2 A. 12 years.

3 Q. Okay. And you said there were two instrumentation
4 engineers?

5 A. Correct.

6 Q. Okay. Can you tell me their names?

7 A. The first one was John Grey, G-R-E-Y.

8 Q. And what was his background?

9 A. Electrical engineering.

10 Q. Okay. And how long had he been in the business?

11 A. Probably about 15 years.

12 Q. Okay. And the other instrumentation engineer?

13 A. Bill Vogtmann, V-O-G-T-M-A-N-N.

14 Q. Can you repeat the last name?

15 A. V-O-G-T-M-A-N-N.

16 Q. And his educational background?

17 A. Chemical engineer.

18 Q. And how long had he been in TiO2?

19 A. I'm not exactly sure but probably about three years.

20 Q. Okay. With respect to the contractors, you said there was
21 a project manager. Who was that?

22 A. That was a guy called Bill Fisher on this job.

23 Q. Okay. And what was his background?

24 A. Mechanical.

25 Q. How long had he been in TiO2?

1 A. None.

2 Q. I thought you said he worked at Stallingborough.

3 A. No, the process engineers worked at Stallingborough.

4 Q. Okay. So this -- Mr. Fisher had no TiO2 experience?

5 A. This was his first job with us.

6 Q. Okay.

7 A. My recollection, it was his first job.

8 Q. And the process engineers?

9 A. I can't remember one of the names.

10 Q. That's okay. Do you remember --

11 A. One of them was called Bill Oakes. He'd worked with us at
12 Stallingborough, so he would have had two years when the job
13 started.

14 Q. And what was his educational background?

15 A. Chemical engineer.

16 Q. And how about the other process engineer?

17 A. I'm trying to remember. In TiO2, the same, because he
18 came on board with the Stallingborough job, the first TiO2 job.
19 He'd worked with us previously on other projects.

20 Q. Okay. In TiO2?

21 A. No, not in TiO2.

22 Q. Okay.

23 A. So for this job, he'd been on the Stallingborough job, so
24 that would have been two years.

25 Q. And then who was the other process engineer?

1 **A.** I said I can't remember his name.

2 **Q.** Do you remember his background?

3 **A.** Chemical engineer.

4 **Q.** And the other is a chemical engineer who had experience or
5 background?

6 **A.** Stallingborough two years, yes.

7 **Q.** Okay. And then the instrumentation engineer, do you
8 remember who that was?

9 **A.** No, I don't.

10 **Q.** Educational background?

11 **A.** Instrument engineering. I do remember that.

12 **Q.** Background instrumentation engineering?

13 **A.** Yes.

14 **Q.** Any TiO2 experience?

15 **A.** No.

16 **Q.** And then the specialist, could you just describe -- you
17 had, like, a number of specialties. You said "rotary machine"
18 and "refractory." Could you just describe what those are?

19 **A.** Rotating machinery is pumps, agitators and the like.

20 Refractory helped us design the refractory systems and specify
21 the refractories for the chlorinator and the reactor. We had a
22 hazard engineer who helped us doing the hazard analysis, and we
23 had one environmental engineer for a very short time who helped
24 us with the environmental.

25 **Q.** How long, just sort of in time, was this team working on

1 that first part that we talked about, starting, you know, from
2 the beginning of the feed process to the end?

3 A. Starting from the feed process to the -- right to the end?

4 Q. Yeah, all the way through to -- well, actually, detail
5 design starts the new step; right?

6 A. Yes.

7 Q. Okay. So just from the beginning of the process until
8 detail design.

9 A. We did two complete feed designs for this job because we
10 changed halfway through.

11 Q. Okay. So how long?

12 A. Six months.

13 Q. So this team was working for six months on two different
14 designs?

15 A. No, one year, six months each.

16 Q. Okay. So they worked for a year?

17 A. Yes.

18 Q. Okay. And I notice that from what you described, there is
19 one, two, three, four, five chemical engineers; right?

20 A. Yes, if that's the count, yes.

21 Q. And that's not surprising because it's a chemical process?

22 A. We had some chemical engineers doing other tasks, like
23 instrument engineering; but that round number is probably
24 typical for the jobs we do. We don't run a lot of mechanical
25 engineers.

1 Q. Okay. So you have -- there's a healthy number of chemical
2 engineers involved in your design process?

3 A. Yes.

4 Q. Okay. Now, I want to talk a little bit about the USAPTI
5 team. Okay? And I want to ask you, at the beginning of this
6 you wrote a report; right?

7 A. Correct.

8 Q. And in your report you said it's your opinion, from the
9 information that had been presented to you, that Mr. Liew and
10 his team had ample experience and qualifications to carry out
11 the work they performed.

12 A. That is correct.

13 Q. Okay. And that's your opinion as we sit here right now?

14 A. It is.

15 Q. Okay. And you also said: (reading)

16 "I believe that Mr. Liew and his team had ample
17 academic and engineering credentials. Mr. Liew functioned
18 largely as a project manager and his Master's degree in
19 electrical engineering was appropriate for this task. He
20 relied on consultants and employees for more specific
21 details of chemical, mechanical, and other engineering
22 disciplines. Those consulting -- those consultants,
23 including Mr. Maegerle, had deep experience and skill in
24 their respective fields."

25 That was your report; right?

1 A. That was what I said, yes.

2 Q. And that's your testimony here today?

3 A. It is.

4 Q. So what I'd like to do is talk about the USAPTI and
5 Performance Group team, design team.

6 A. Okay.

7 Q. Can you -- you go ahead and start telling me the names of
8 the people on the team.

9 A. I don't know the people on the team. I know some of the
10 names that I've seen in emails, but I don't believe I ever saw
11 a complete list of the people who were working on the project.
12 I can't remember seeing that.

13 Q. Well, let's -- but, sir, you just said that you had an
14 opinion about that team.

15 A. The work product that they produced I had an opinion on.

16 Q. Well, no, actually, you also had an opinion about the
17 people on that team.

18 A. Mr. Liew certainly I had an opinion on.

19 Q. Okay. So we'll put Mr. Liew up there. What is his
20 educational background, Mr. Walter Liew?

21 A. I understand electrical engineer.

22 Q. Okay. How many years of experience in the industry?

23 A. Clearly from what I've seen, none.

24 Q. Okay. So Mr. Liew is an electrical engineer with zero
25 experience in TiO2?

1 **A.** So I understand from the documentation, yes.

2 **Q.** Okay. Who else are you aware of on the team?

3 **A.** Mr. Maegerle.

4 **Q.** What's Mr. Maegerle's background?

5 **A.** I understand mechanical engineer.

6 **Q.** How many years in the industry?

7 **A.** Many. I never worked it out how many.

8 **Q.** Okay. So many. Do you have a sense of how many?

9 **A.** At least 30 or 40 years.

10 **Q.** Okay. So I'll put 30 plus.

11 Okay. Who's next?

12 **A.** I believe Mr. Maegerle was also acting as a process
13 engineer from the documentation that I saw.

14 **Q.** Right. But who else was on the team?

15 **A.** Specific names I'm struggling to remember apart from the
16 lady I saw yesterday on the witness stand.

17 **Q.** Okay. That's Ms. Sanghi, Sudha Sanghi?

18 **A.** That's correct.

19 **Q.** What's her background?

20 **A.** I don't know.

21 **Q.** How much time in the industry?

22 **A.** From what I read, zero.

23 **Q.** What was her role on the team?

24 **A.** What I would call a mechanical designer.

25 **Q.** Okay. She's like a draftsman?

1 A. Terms have changed over the years with computer-aided
2 drafting. No. I would put her a level above a draftsman.

3 Q. Okay. And you would call her what?

4 A. A mechanical designer.

5 Q. Okay. And what's the function of a mechanical designer?

6 A. They go beyond the state, so they do all sorts of
7 drawings, including some detail mechanical drawings.

8 Q. And you're not familiar with her educational background?

9 A. No, I'm not.

10 Q. Okay. Who else?

11 A. To be honest, that's all the names that I recollect
12 accurately.

13 Q. Your report is right there in front of you. Would it help
14 you to refer to that?

15 A. Yes. What page are you referring to?

16 Q. Well, it's your report. Why don't you take a look.

17 A. (Witness examines document.)

18 Q. And if it assists, I believe it's page 13 or 14 where you
19 rendered your opinion.

20 A. I see that.

21 (Witness examines document.) I see no other main names
22 mentioned in this report by name.

23 Q. Okay. Are there any other categories of persons that you
24 recall?

25 A. They appear to have a mechanical engineer doing some

1 equipment design.

2 Q. Okay. And that mechanical engineer, what amount of TiO2
3 experience?

4 A. I can't say because I can just remember they had one.

5 Q. Okay. So I'll just put a question mark there.
6 What other types of persons?

7 A. I believe they had another mechanical designer.

8 Q. So somebody -- a peer of Ms. Sanghi's?

9 A. I believe so, yes.

10 Q. Okay. And what was that person's background?

11 A. I don't know.

12 Q. Do you know their training, their educational background?

13 A. No.

14 Q. Any TiO2 experience?

15 A. Don't know.

16 Q. Who else?

17 A. They appeared to have an instrument engineer on the team,
18 but for the life of me, I can't remember.

19 Q. Okay. Do you know that person's educational background?

20 A. No, I don't.

21 Q. Any TiO2 experience?

22 A. Don't know.

23 Q. Anyone else?

24 A. Not that I immediately recollect, no, but there were more
25 names I've seen on the emails.

1 Q. Do you know how long Ms. Sanghi worked there?

2 A. I believe I heard in testimony, was it two and a half
3 years yesterday?

4 Q. Do you remember from when to when?

5 A. No.

6 Q. Okay. How about this person, the mechanical engineer
7 doing equipment design?

8 A. No, I can't add to those descriptions.

9 Q. And same for these mechanical design engineers?

10 A. Correct.

11 Q. So there's -- looking at the USAPTI team, there's one
12 person who has experience in TiO₂; right?

13 A. That's the name I remember, yes, who was generating the
14 drawings.

15 Q. Mr. Maegerle?

16 A. Yes.

17 Q. No one else?

18 A. I believe early on, there was a chemical engineer. I saw
19 reference to Tim Spitler.

20 Q. Okay. Mr. Spitler. How many years of TiO₂ experience did
21 he have?

22 A. I don't know.

23 Q. Now --

24 A. And I saw one more name on the mechanical side called
25 Ernie.

1 Q. Ernie?

2 A. Ernie. I don't remember the surname.

3 Q. Okay. Is that one of the people that we've already
4 identified or is that someone else?

5 A. Someone else.

6 Q. Okay. And did Ernie -- what was Ernie's role?

7 A. The role I saw in the documentation was designing the ore
8 and coke handling systems.

9 Q. When?

10 A. Sorry, I don't remember.

11 Q. Do you know anything about his educational background?

12 A. No, I don't.

13 Q. Do you know if he has any TiO2 experience?

14 A. I don't know.

15 Q. Now, have you seen -- you don't have any information that
16 Mr. Spitler actually worked at USAPTI or Performance Group; do
17 you?

18 A. That is correct.

19 Q. Okay. You know he attended one meeting with the Pangang
20 clients in San Francisco; right?

21 A. Yes, I think I saw that.

22 Q. Okay. And, in fact, he provided Mr. Liew with some plans?

23 A. I don't recollect that. Sorry.

24 Q. Okay. But other than attending the one meeting, are
25 you -- he wasn't involved in the day-to-day of the business?

1 **A.** From the documentation I saw, no, that is correct.

2 **Q.** Okay. So -- and he wasn't involved in the day-to-day
3 projects to design for USAPTI or Performance -- the 30,000-ton
4 project or the 100,000-ton project?

5 **A.** I have no knowledge of that.

6 **Q.** Okay. So I just want to ask you again about your opinion.
7 USAPTI has one person, Mr. Maegerle, who you know has TiO2
8 experience. That's it.

9 **A.** Correct.

10 **Q.** Is it still your opinion that Mr. Liew and his team had
11 ample experience and qualifications to carry out the work they
12 performed?

13 **A.** From the documentation I saw, yes, that is correct.

14 **Q.** And it is still your opinion that you believed Mr. Liew
15 and his team had ample academic and engineering credentials?

16 **A.** From the documentation I saw, yes.

17 **Q.** You have identified one electrical engineer, one
18 mechanical engineer by name, and that's it.

19 **A.** That is correct.

20 **Q.** Okay. I want to move on with you to another area that was
21 talked about yesterday.

22 **MR. AXELROD:** May I just have a moment, Your Honor?

23 **THE COURT:** Sure.

24 **MR. AXELROD:** I'm looking for an exhibit.

25 (Pause in proceedings.)

1 **MR. AXELROD:** Ah, here we go.

2 **Q.** Mr. Cooper, you talked yesterday about this photograph;
3 right?

4 **A.** That's correct.

5 **Q.** Okay. And you, looking at that picture, you can't -- you
6 can't determine the distance from the jets to the sidewalls
7 from that picture, can you?

8 **A.** From this picture you can scale using knowing what the
9 width of the trailer is, actually.

10 **Q.** So -- okay. But I just -- I want to make sure that I'm
11 clear, because I'm asking you a specific question. Okay?

12 And the question I'm asking you is: You can't determine
13 the distance from the jets to the sidewall in this picture; can
14 you? Just from this picture.

15 **A.** From this picture, you can get an idea. You can't
16 determine exactly.

17 **Q.** Right. You can't determine the exact number; can you?

18 **A.** I can determine the exact number of risers.

19 **Q.** That's not the question. The question is: Can you
20 determine the distance from the sidewall of that chlorinator to
21 the jets?

22 **A.** That is correct.

23 **Q.** You cannot determine that?

24 **A.** That is correct.

25 **Q.** Okay. And you also can't determine the distance between

1 the jets from that picture; can you?

2 A. That is correct.

3 Q. Okay.

4 A. You can't see the whole trailer.

5 Q. Now, you talked about this chlorinator, and you said that
6 this was the Antioch chlorinator; right?

7 A. By its location, yes, that's what it appeared to be.

8 Q. Well, are you sure of it?

9 A. A hundred percent sure?

10 Q. Yes.

11 A. No. Just because it was in the location and it's a
12 chlorinator.

13 Q. So what percentage sure are you?

14 A. 95.

15 Q. Okay. So you're 95 percent sure that's the DuPont -- or,
16 excuse me, the Antioch chlorinator?

17 A. That is correct.

18 Q. Okay. But that's not the chlorinator design used at any
19 currently operating DuPont plant; is it?

20 A. Precisely, that statement is correct.

21 Q. Right.

22 A. However, if I may elaborate a little bit?

23 Q. No. It's fundamentally different from what's currently
24 used by DuPont in their plants; isn't it?

25 A. That is correct.

1 Q. Okay. That's not the Kuan Yin chlorinator; is it?

2 A. Which Kuan Yin chlorinator?

3 Q. Either of the Kuan Yin chlorinators.

4 A. The one that's presently or that was designed by USAPTI?

5 Q. I'm sorry. I think you misheard me. I'm talking about
6 Kuan Yin, the DuPont facility in --

7 A. I apologize. You're quite right.

8 That is correct. I don't know what's been operating at
9 Kuan Yin at this time.

10 Q. Have you ever been to Kuan Yin?

11 A. No, I have not.

12 Q. Have you ever seen a chlorinator there?

13 A. No, I have not.

14 Q. Okay. And this isn't -- this picture, Exhibit 1726,
15 that's not the DeLisle chlorinator; is it?

16 A. Certainly not, no.

17 Q. Okay.

18 A. It's not big enough.

19 Q. You've never been in the DuPont facility at DeLisle; have
20 you?

21 A. No, I have not.

22 Q. You've never actually inspected the chlorinators they use
23 at DeLisle; have you?

24 A. That is correct.

25 Q. Okay. And this isn't the Edgemoor chlorinator either?

1 **A.** That is correct.

2 **Q.** Okay. And you haven't been there?

3 **A.** That is correct.

4 **Q.** You've never seen the chlorinator there?

5 **A.** That is correct.

6 **Q.** And it's not the chlorinator for New Johnsonville either?

7 **A.** That is correct.

8 **Q.** You've never been to New Johnsonville?

9 **A.** That is correct.

10 **Q.** You've never seen the chlorinator at New Johnsonville?

11 **A.** That is correct.

12 **Q.** And this isn't the Altamira chlorinator either?

13 **A.** That is correct.

14 **Q.** You've never been to Altamira?

15 **A.** Correct.

16 **Q.** So you don't know what any of the actual currently
17 operating chlorinators look like in those plants?

18 **A.** That is correct.

19 **Q.** And, in fact, you've never known what they look like?

20 **A.** That is correct.

21 **Q.** So yesterday when you were saying that, basically, all
22 chlorinators in the industry are the same, you were just
23 speculating; right?

24 **A.** No.

25 **Q.** Well, you don't actually know about all the chlorinators

1 at DuPont facilities; right?

2 A. What I said, I believe, was, basically, the same function.
3 You are quite correct in your statement.

4 Q. I want to --

5 MR. AXELROD: Could we switch back to the computer,
6 please? Thank you.

7 Q. I want to ask you about the Accession Report that you
8 talked about briefly with Mr. Gasner earlier today. That's
9 Exhibit 162. Do you recall that?

10 A. Yes, I do.

11 Q. And, Ms. Mahoney, could you bring up page 162-36,
12 Exhibit 162-36?

13 A. I don't have it.

14 Q. Oh, it might take a moment to show up on your screen.

15 A. Now I have it.

16 Q. Okay. Is that acceptable or would you prefer the hard
17 copy?

18 A. No, this is fine. Thank you.

19 Q. Okay. Ms. Mahoney, can you please blow up the text?
20 Yeah, that whole box there.

21 Mr. Cooper, you've reviewed this document; right?

22 A. That is correct.

23 Q. And you're familiar with this chart; right?

24 A. Correct.

25 Q. And you understand that what it shows is actual operating

1 geometry, actual geometries of the oxidation reactors at
2 various DuPont facilities?

3 A. I don't specifically know that.

4 Q. Okay. Well, you reviewed the testimony of Dr. Diemer;
5 didn't you?

6 A. Yes, I did.

7 Q. And that's what he had to say about this; right?

8 A. That was his testimony.

9 Q. Okay. Do you have any reason to disbelieve him?

10 A. It's a question of timing. This was a very old report.
11 From the research I've done, these dimensions no longer apply.

12 Q. That's not the question I asked you.

13 A. I was trying to answer as fully as I could.

14 Q. The question I asked you is: Do you have any reason to
15 question that these are the particular specific geometries of
16 the DuPont oxidation reactors at DuPont facilities at a
17 particular point in time?

18 A. I have no evidence to the contrary, that is correct.

19 Q. Okay. And, so, what you see there are specific geometries
20 for DL-I is DeLisle Line I; right?

21 A. I presume so, yes.

22 Q. And JV-II is Johnsonville Line II; right?

23 A. I presume so.

24 Q. And that's Edgemoor Line II is EM-II?

25 A. Again, I presume so.

1 Q. And JV-I is Johnsonville Line I; right?

2 A. Correct.

3 Q. And the last one is Antioch?

4 A. Correct.

5 Q. And then it's got the dimensions of -- beneath it of
6 various components of the oxidation reactor; right?

7 A. It has got the dimensions of one part of the oxidation
8 reactor.

9 Q. A very important part?

10 A. Yes. Correct.

11 Q. And then it has the rate; right?

12 A. That is correct.

13 Q. And then it's got some other information about the process
14 as well?

15 A. That is correct.

16 Q. None of this information is publicly available?

17 A. I must disagree with that statement.

18 Q. You must disagree?

19 A. Yes.

20 Q. So where can you tell -- where can I find this particular
21 collection of information in the public domain?

22 A. The rates of the plants can be calculated from reports
23 like IBMA, TZMI.

24 Q. That's not what I'm asking you, sir. This specific
25 collection of information, where can I find that in the public

1 domain?

2 **A.** Certain patents actually quote what the flow rates are.

3 **Q.** Okay. Let me -- I'm going to have to break this down
4 then.

5 Let's just look at the top line. The geometries of the
6 oxidation reactor, where can that be found in the public
7 domain?

8 **A.** These particular dimensions cannot.

9 **Q.** Okay. They don't -- did you look for them?

10 **A.** I found dimensions but, these weren't there.

11 **Q.** No, but as part of your assignment and work on this case,
12 did you look to see whether this actual information was in the
13 public domain?

14 **A.** No, I did not.

15 **Q.** Okay. But you're unaware of it being in the public
16 domain; right?

17 **A.** This particular information, that is correct.

18 **Q.** And that's not terribly surprising. You worked in the
19 TiO₂ industry for a long time. Nobody would publish the
20 dimensions of their oxidation reactor; would they?

21 **A.** Again, I must disagree with that statement.

22 **Q.** So it's your testimony -- let me step back.

23 You'd agree with me, sir, that the oxidation reactor is
24 the heart of the process; right?

25 **A.** Yes.

1 Q. And companies, including the ones that you've worked for,
2 protect that technology?

3 A. Yes.

4 Q. And part of protecting that technology is maintaining the
5 secrecy of the particular geometries and design dimensions of
6 their reactors?

7 A. That is correct.

8 Q. Okay. You were taking issue with the rate information,
9 the line rate information?

10 A. That is correct.

11 Q. Okay. My question to you is: Where in the public domain
12 can you find this collection of rate information?

13 A. The collection of rate information, you cannot.

14 Q. Okay. Ms. Mahoney, could you go to page 38 of this
15 exhibit?

16 Okay. And, Mr. Cooper, you're familiar with this
17 particular chart?

18 A. I've seen it before, yes.

19 Q. Okay. So you know that this reflects plant-specific
20 information about mixing lengths and results?

21 A. That is correct.

22 Q. And this particular collection of information you cannot
23 find in the public domain; can you?

24 A. This specific information, you are correct. There is
25 other information out there.

1 Q. I understand. But this information you can't get?

2 A. That is correct.

3 Q. And that's particularly --

4 A. Sorry. May I correct myself?

5 Q. Please.

6 A. The first line, the second line, to be specific, you are
7 correct. The rest of the information is readily available.

8 Q. Okay. Let's move on.

9 Well, no, before we do -- no, let's move on to page 9. If
10 you could, Ms. Mahoney, could you go to page 9?

11 And, Mr. Cooper, are you familiar with this information
12 from the Accession Report?

13 A. I've seen this page before, yes.

14 Q. Okay. So you're aware of the fact that it contains
15 specific information about the flue pond at Edgemoor?

16 A. No, I wasn't, actually.

17 Q. Well, did you read the report as part of your work?

18 A. I didn't associate it with Edgemoor. I just associated it
19 with a DuPont plant.

20 Q. Okay. Well, I believe if you look in the document, it,
21 actually, explains that these --

22 A. I might have missed that.

23 Q. Okay. This specific collection of information, you can't
24 find this in the public domain either; can you?

25 A. (Witness examines document.) Some of it is available in

1 the public domain, yes, it is.

2 Q. Okay. Well, let's focus -- so -- but that's not my
3 question. My question is: All that information together, can
4 you find that?

5 A. Together in one place, no.

6 Q. Other than in this document, the Accession Report, would
7 this information, and Dr. Diemer's correlation, and all the
8 other information contained in it, can you find that anywhere
9 else other than in this specific document?

10 A. This accumulation of information, no, you cannot.

11 Q. Okay. And did you, as part of your work, try to find it?

12 A. I found some of this in separate documentation, yes.

13 Q. Right. But, I mean, as part of your work in testifying in
14 this case, did you go out and set about to see if you could
15 actually get a copy of the Accession Report in the public
16 market?

17 A. Yes, I did; and, no, you can't.

18 Q. And this type of data that we've been looking at, the
19 geometries of the oxidation reactors, the specific collection
20 of flue pond information, could you find that type of
21 information for Ashtabula 1 in the public domain?

22 A. Specific to Ashtabula 1?

23 Q. Yes.

24 A. No, you can't.

25 Q. Because that information is just not public; right?

1 **A.** That is correct. At Ashtabula 1, that is correct.

2 **Q.** Well, Ashtabula 1 was the facility that SCM bought from
3 Sherwin-Williams; right?

4 **A.** But if you make --

5 **Q.** That's just a -- is that a correct statement?

6 **A.** That is correct.

7 **Q.** Okay. So I want to talk to you -- and, Ms. Mahoney, you
8 can bring this down -- I wanted to talk to you for a moment
9 about equipment.

10 You mentioned, I think you mentioned yesterday, that
11 certain pieces of equipment are typically supplied by vendors;
12 right?

13 **A.** That is correct.

14 **Q.** Kind of off-the-shelf equipment?

15 **A.** That is correct.

16 **Q.** But I gather that there are other pieces of equipment that
17 aren't off the shelf?

18 **A.** That is correct, too.

19 **Q.** And there's -- TiO2 companies do custom design for certain
20 pieces of equipment; right?

21 **A.** If you would define "custom" for me.

22 **Q.** We're going to talk about that. There's certain pieces of
23 equipment that a TiO2 company is going to make themselves;
24 right? They're not going to just buy it off the shelf?

25 **A.** No, most titanium dioxide companies do not manufacture

1 their own equipment.

2 Q. I'm not asking about manufacturing, and maybe my question
3 wasn't clear. I'm talking about designing, and pardon me if
4 that wasn't clear.

5 A. That is correct, that statement.

6 Q. Okay. And, so, those kind of custom design pieces are
7 treated as proprietary by the companies; right?

8 A. No, not necessarily.

9 Q. Okay. So let's just talk for a moment about the oxidation
10 reactors if they -- at SCM or Millennium; right?

11 A. Fine.

12 Q. That's a piece of equipment that the company treated as a
13 confidential and proprietary design; right?

14 A. That is correct.

15 Q. Okay. And you've been in the industry a long time.
16 That's how everybody treats their oxidation reactors; right?

17 A. No.

18 Q. Okay. Other than Kerr-McGee that did some licensing;
19 right?

20 A. Correct.

21 Q. Okay. So everybody else, basically, keeps it to a close
22 hold?

23 A. They -- that would be true to say, yes.

24 Q. Okay. And people would -- I mean, maybe you could give me
25 some examples of other pieces of equipment that would be sort

1 of custom designed other than the oxidation reactor.

2 **A.** Probably the aluminum chloride generator. That's the one
3 immediately springs to mind. The others I would not consider,
4 by your definition, custom.

5 **Q.** How about by your own definition, what else would you
6 consider?

7 **A.** For SCM, that would be it, actually.

8 **Q.** So SCM would not consider its chlorinator a proprietary
9 design?

10 **A.** No, they wouldn't.

11 **Q.** Okay. Any other types of designs that wouldn't just come
12 from the vendor that you can think of?

13 **A.** Clearly you would get, when you're building a plant, you
14 would get your engineering company to design certain pieces of
15 equipment, but they would be standard equipment like tanks,
16 piping, those sorts of things. I don't consider them custom by
17 any means.

18 **Q.** Okay. And yesterday you testified that you reviewed some
19 of the USA -- you reviewed USAPTI's equipment lists for these
20 projects; right?

21 **A.** That is correct.

22 **Q.** So I'd like to, actually, show one to you.

23 **THE COURT:** Let's take a stretch break. A stretch
24 break while you're doing that.

25 (Pause in proceedings.)

1 **THE COURT:** Okay.

2 **MR. AXELROD:** May I continue, Your Honor?

3 **THE COURT:** Yes, please.

4 **MR. GASNER:** Your Honor, could the Court inquire of
5 Mr. Axelrod whether I can move this?

6 **THE COURT:** Yes, do you still need that?

7 **MR. AXELROD:** We can move that, of course.

8 **MR. GASNER:** Thank you.

9 **MR. AXELROD:** I'm sorry.

10 **THE COURT:** Thank you.

11 **MR. AXELROD:** May I approach, Your Honor?

12 **THE COURT:** Yes.

13 **BY MR. AXELROD:**

14 **Q.** Mr. Cooper, I'm approaching with Exhibit 189, Volume II.
15 It's a binder, "USA Performance Technology, Inc., BI Submittal,
16 Process Volume II." Do you recognize that document?

17 **A.** (Witness examines document.) I believe I've seen all of
18 it in parts. I'm not sure I've seen this exact compilation.

19 **Q.** Okay.

20 **A.** But, yes, I've seen it in parts.

21 **Q.** Okay. And if you could look -- there's an orange square
22 sticky is the page I was hoping we could look at together.

23 **A.** (Witness examines document.)

24 **Q.** And this is a document --

25 **MR. AXELROD:** Your Honor, the parties have stipulated

1 that this document is from the USAPTI office.

2 **THE COURT:** Is that correct?

3 **MR. GASNER:** Yes, Your Honor.

4 **THE COURT:** All right. So stipulated.

5 **MR. AXELROD:** And the Government offers it into
6 evidence.

7 **MR. GASNER:** No objection.

8 **THE COURT:** Admitted.

9 (Trial Exhibit 189 received in evidence)

10 **MR. AXELROD:** And, Ms. Mahoney, if you could pull up,
11 this is Exhibit 189, page 284.

12 Okay. And if you could blow up, Ms. Mahoney, the top
13 third of that document. That's not going to do it.

14 **THE CLERK:** Counsel, can I just clarify? Are there
15 two different binders, one's I and one's II, and this is only
16 Volume II?

17 **MR. AXELROD:** That is correct.

18 **THE CLERK:** Submitted volume I is not admitted?

19 **MR. AXELROD:** That is correct.

20 **THE CLERK:** Thank you.

21 **MR. AXELROD:** Thank you.

22 **Q.** And, Mr. Cooper, feel free to look at the larger print
23 document in front of you.

24 **A.** Please.

25 **Q.** This is, as sometimes we say, this is good enough for

1 Government work, so this is as good as I can get. I apologize.

2 So could you describe what it is what we're looking at?

3 A. You're looking at a list which is specified "Recommended
4 Import Equipment." It's a list of equipment by process flow
5 diagram. It has the identifier, the description, the area, the
6 specification, the materials of construction, and the supplier.

7 Q. Okay. So just to take an example, a little bit of the
8 ways down there it says -- the first one says "PFD-3," the
9 description is a "Coke and Ore Injection Pump Number 1."

10 That's a piece of equipment; right?

11 A. That is correct.

12 Q. And if you look across, it has a supplier FLSmidth and
13 Claudius Peters; right?

14 A. That is correct.

15 Q. And those are some of the vendors we've been talking
16 about?

17 A. That is correct.

18 Q. Okay. And then if you go down a little bit further, it
19 says, "PFD Number 4, Spray Machine." And that's in
20 chlorination. And then what does it say for supplier?

21 A. "USAPTI Custom Fabrication."

22 Q. So that's one that USAPTI was going to be designing;
23 right?

24 A. That would be what I presume from this list, yes.

25 Q. And there are other pieces of equipment -- and,

1 Ms. Mahoney, if you could scroll down on this drawing -- or,
2 excuse me, on this page. And if you need to break out, I'd
3 like you to go -- let's go to the next page, if we could, 189,
4 page 285. Thank you.

5 And the very first line there is the aluminum chloride
6 generator. Do you see that, Mr. Cooper?

7 A. Yes, I do.

8 Q. And who's doing the design for that?

9 A. USAPTI.

10 Q. Okay. And if we could go down a little bit further, if we
11 could back out -- I apologize, Ms. Mahoney.

12 There is a -- if you go down a little bit further, it
13 says, "Oxidation Reactor." Do you see that?

14 A. Yes, I do.

15 Q. And, Ms. Mahoney, if you could blow that up. Thank you.

16 And who's designing that?

17 A. USAPTI.

18 Q. So there are some items that are sort of off-the-shelf,
19 and you get those from the vendors; right?

20 A. That is correct.

21 Q. And then there's other items that are the more sensitive
22 items, and they get designed by USAPTI?

23 A. Those you've specified, yes.

24 Q. Okay. Well, there's more on the list; right?

25 A. Yes, but they aren't custom fabrications.

1 Q. Well, but the point is that the design is being conducted
2 by USAPTI; right?

3 A. No. They're being supplied by USAPTI, I believe.

4 Q. Okay. Do you know who on Mr. Liew's team designed those
5 pieces of equipment?

6 A. I don't recollect who actually did the design. The
7 original drawings that I saw came from Mr. Maegerle.

8 Q. From Mr. Maegerle?

9 A. Yeah.

10 Q. Okay. The oxidation reactor?

11 A. Yes.

12 Q. Chlorinator?

13 A. Yes.

14 Q. Aluminum chloride generator?

15 A. Yes.

16 Q. And is it your testimony that the necessary information to
17 design an oxidation reactor is publicly available?

18 A. Parts of it is. Parts of it are not.

19 Q. What parts are not?

20 A. I've not seen a design of the combustion chamber. That's
21 about it.

22 Q. So other than the combustion chamber, everything else is
23 publicly available?

24 A. That -- there is sufficient information in the public
25 domain to do that design, yes.

1 Q. And to do a design and have confidence that it would work
2 at a commercially viable size?

3 A. That, I didn't say. I don't know that. There is enough
4 information in the patents to dimension those things. Even
5 when you have that, the reactor doesn't necessarily work.

6 Q. Exactly right. You need to have experience with the
7 process; right?

8 A. You need to, actually, run the reactor under the
9 conditions that you are going to run it at.

10 Q. And are the specific conditions that you're going to run a
11 reactor at publicly available?

12 A. In general, yes.

13 Q. So the specific conditions for the Ashtabula Line 1
14 reactor are publicly available?

15 A. They were available by the Antioch specification, yes.

16 Q. No. I'm asking you, sir, today if I wanted to know
17 Ashtabula 1, what it runs on, what the operating conditions
18 are, is that publicly available information?

19 A. No. SCM did not publish patents on that piece of
20 equipment.

21 Q. Okay. Well, let's -- I'm not asking you about patents.
22 I'm asking you about specific operating conditions.

23 A. I'm sorry. I must have misunderstood. There are specific
24 operating conditions out there. SCM chooses not to publish
25 that information.

1 Q. In fact, it's never published that information?

2 A. That, also is not quite correct. There are patents on the
3 Stallingborough reactor.

4 Q. Right. But I'm talking about -- let's take
5 Stallingborough. The specific operating conditions at
6 Stallingborough that the company uses today, are those specific
7 conditions available by looking -- is that actual information
8 in the public domain?

9 A. There are pressures and temperatures for the operation of
10 the reactor, yes.

11 Q. For that specific reactor?

12 A. For that specific reactor.

13 Q. I'd like to talk to you about -- I'd like to talk about
14 some of the patents that were discussed during your testimony.
15 And bear with me. I've got to grab the....

16 (Pause in proceedings.)

17 MR. AXELROD: Your Honor, may I approach --

18 THE COURT: Yes.

19 MR. AXELROD: -- with Exhibit 2256?

20 THE COURT: Yes.

21 BY MR. AXELROD:

22 Q. Mr. Cooper, I'm handing you what's been marked as
23 Exhibit 2256. Do you recognize that document?

24 A. Yes. This is one of the DuPont patents I looked at.

25 Q. Okay. And....

(Pause in proceedings.)

THE CLERK: It's admitted?

MR. AXELROD: This is an admitted exhibit.

May I just have a moment, Your Honor, to collect my documents here?

THE COURT: Sure.

(Pause in proceedings.)

MR. AXELROD: Could I ask -- indulge the Defense to ask Mr. Guevara to pull up Exhibit 2256?

MR. GASNER: Absolutely.

MR. AXELROD: Thank you.

MR. GASNER: It's no problem.

MR. AXELROD: Thank you very much.

(Pause in proceedings.)

BY MR. AXELROD:

Q. Now, yesterday you read the first sentence of the second paragraph of Column 1. So if we could go to Column 1 and that second paragraph.

You read the sentence, that first sentence there that says: (reading)

"The preparation of titanium dioxide through reaction of titanium tetrachloride in the vapor phase with an oxygen-containing gas or by a so-called steam-splitting reaction is already known."

Do you recall that?

1 **A.** Yes, I do.

2 **Q.** Okay. Now, you didn't read the rest of that paragraph,
3 did you?

4 **A.** I did not.

5 **Q.** Could you please read the rest of that paragraph?

6 **A.** (reading)

7 "However, such prior methods lack technical
8 importance and are not adaptable to nor feasible for
9 commercial exploitation due to the fact that they entail a
10 very difficult, costly, and discontinuous type of
11 operation and produce a titanium dioxide product which is
12 decidedly lacking in essential pigment properties..."

13 Shall I continue?

14 **Q.** Please. Thank you.

15 **A.** (reading)

16 "... e.g., exhibits such poor tinting strength and
17 coarse, nonuniform particle size distribution that it
18 fails to meet the stringent requirements demanded by
19 the TiO₂ pigment trade."

20 **Q.** Can you please finish that paragraph? It might be hard to
21 see, but I think it still goes.

22 **A.** (reading)

23 "Also, control over the crystalline form of the
24 titanium dioxide produced from such procedures cannot be
25 effected, and such large excesses of oxygen are required

1 to convert the tetrachloride that contamination of the
2 gaseous chlorine simultaneously formed with the TiO₂ takes
3 place to render the chlorine unfit for reuse."

4 Q. And this patent related to a lab scale process; right?

5 A. That's what the numbers tell me, yes.

6 Q. Okay. So this was not an actual commercial production
7 facility?

8 A. No. This is a purely historical document.

9 Q. Okay.

10 MR. AXELROD: Your Honor, may I approach with
11 Exhibit 2246?

12 THE COURT: Yes, you may.

13 BY MR. AXELROD:

14 Q. I'm handing you what's been marked as Exhibit 2246. Do
15 you recognize that document? It's an admitted exhibit.

16 A. Yes, I do.

17 Q. And I'm going to put this up on the ELMO.

18 Okay. And you spoke about this patent as well yesterday;
19 right?

20 A. Yes, I did.

21 Q. But this patent concerns fixed bed chlorination; right?

22 A. That's correct.

23 Q. Not fluid bed chlorination?

24 A. That is correct.

25 Q. And the process that Mr. Maegerle designed was a fluid bed

1 process; right?

2 A. That is correct.

3 Q. And this particular patent that you referred to yesterday
4 concerns making briquettes out of carbon and molasses; right?

5 A. That is correct.

6 Q. And then putting those into a shaft furnace?

7 A. That is correct.

8 Q. So it has absolutely nothing to do with current practice?

9 A. It was -- I read it purely as a historical document.

10 Q. Okay. And this process, this never worked in practice;
11 did it?

12 A. A very similar one did.

13 Q. Well, but my question is: This process described in this
14 patent, that never worked commercially; did it?

15 A. There was a commercial process in the UK that used a shaft
16 furnace with briquettes, yes.

17 Q. Okay. But you're familiar with Pittsburgh Paint and
18 Glass; right?

19 A. Yes.

20 Q. In fact, you do some work with them; right?

21 A. I have done work with them, yes.

22 Q. And you know that they attempted to commercialize this
23 process; right?

24 A. I don't know that for a fact.

25 Q. You don't?

1 **A.** Not this process, no.

2 **Q.** You're not familiar with them attempting that process?

3 **A.** No, I am not.

4 **MR. AXELROD:** Your Honor, may I approach with
5 Exhibit 2326?

6 **THE COURT:** Yes.

7 **BY MR. AXELROD:**

8 **Q.** Mr. Cooper, I'm going to hand you Exhibit 2326. Do you
9 recognize that patent?

10 **A.** Yes, I do.

11 **Q.** Okay. And that's another one of the ones that you
12 discussed yesterday?

13 **A.** Yes, I did.

14 **Q.** And we talked -- yesterday you testified regarding
15 conveying gas rates in one of Mr. Maegerle's emails. Do you
16 recall that?

17 **A.** Yes, I do.

18 **Q.** And I want to -- if we could go --

19 **MR. AXELROD:** And I apologize. If we could flip over
20 to the computer for Ms. Mahoney.

21 (Pause in proceedings.)

22 **MR. AXELROD:** And when it comes on, Ms. Mahoney, would
23 you go to Exhibit 126, page 1? Thank you. And if you could
24 blow up the text there.

25 **THE WITNESS:** I still don't have it on the screen.

1 **MR. AXELROD:** Okay. I think it will take a moment.

2 **THE COURT:** There's a delay. We have an engineering
3 problem here with a delay.

4 **THE WITNESS:** Thank you, Your Honor.

5 **THE COURT:** Yes.

6 **THE WITNESS:** Yes, I have it now.

7 **MR. AXELROD:** You have it now? Okay.

8 And, Ms. Mahoney, could you blow up the text of that
9 email.

10 **Q.** Okay. So there's two things I wanted to ask you about,
11 Mr. Cooper. First, it says: (reading)

12 "The Kuan Yin nitrogen flow to inject ore and coke
13 solids into the chlorinator" --

14 **THE COURT:** Slow down, please.

15 **MR. AXELROD:** Yes. I'm so sorry. (reading)

16 "The Kuan Yin nitrogen flow to inject ore and coke
17 solids into the chlorinator is [number] of pounds per
18 hour. This is through a [number] inch line."

19 Do you see that?

20 **A.** Yes, I do.

21 **Q.** So the first thing is, you never talked about the number
22 inch line, did you?

23 **A.** No, I did not.

24 **Q.** No. But that specific information is found in the Basic
25 Data Document; isn't it?

1 **A.** I believe so.

2 **Q.** But you did talk about that number pounds per hour. Do
3 you recall that?

4 **A.** Yes, I do.

5 **Q.** And you said that that patent that you now have in front
6 of you, 2326, made a public disclosure of that information. Do
7 you recall that?

8 **A.** Yes, I do.

9 **Q.** But that's not true. The patent -- where is that specific
10 number in the patent?

11 **A.** (Witness examines document.) The one I was referring to
12 was Column 8.

13 **Q.** Uh-huh.

14 **A.** I believe that was the reference I had made.

15 **Q.** Okay. But it doesn't identify that specific number.

16 **A.** (Witness examines document.) It identifies a number,
17 which is just slightly different than this one, that is
18 correct.

19 **Q.** Okay. So it's not the same number?

20 **A.** It is not the same number.

21 **Q.** And, in fact, the patent, actually, says nothing about
22 conveying gas rate, that specific conveying gas rate that's in
23 Mr. Maegerle's email?

24 **A.** Sorry. Could you repeat precisely what you mean?

25 **Q.** Yes. So the conveying -- the gas rate that's specifically

1 mentioned in Mr. Maegerle's email is not found in that patent?

2 **A.** The pounds in hour, is that what you're meaning?

3 **Q.** Yes.

4 **A.** That is correct.

5 **Q.** Okay.

6 **MR. AXELROD:** Your Honor, may I approach with
7 Exhibit 3171?

8 **THE COURT:** Yes, you may.

9 **BY MR. AXELROD:**

10 **Q.** Mr. Cooper, I'm handing you what's been marked as 3171.
11 It's another one of the patents you talked about yesterday.

12 **A.** (Witness examines document.)

13 **Q.** And, Ms. Mahoney, could you please bring up Exhibit 78?
14 And can you blow up the text? Thank you so much.

15 Now, there is a -- there's a fluid -- there's a
16 fluidization air rate in this email that's in front of you;
17 right? There's a number FPS, normal velocity FPS? Do you see
18 that?

19 **A.** Feet per second, yes, that's correct.

20 **Q.** Okay. And you testified that that air rate appears in the
21 patent, which is 3171; right?

22 **A.** That is correct.

23 **Q.** Can you please show me where?

24 **A.** Where I picked it from was Column 4. It's either line 31
25 or 32. The numbering is off there.

1 Q. Okay. But that specific number isn't in the patent.

2 A. As I explained yesterday, normal rounding, because this is
3 in the patent, to one decimal place. The number on the page is
4 two decimal places. For all intents and purposes, with
5 mathematical rounding, they are the same number.

6 Q. Okay. That's your opinion.

7 A. That is not just my opinion. That is what you do
8 mathematically when you quote to a single decimal point. You
9 don't know what the second decimal place is.

10 Q. But the specific number mentioned in the email was from
11 the Basic Data Document; right?

12 A. I believe that is correct.

13 Q. And the number in the patent is different than that? It's
14 not the same number.

15 A. It is not identical to the number, that is correct.

16 MR. AXELROD: Your Honor, may I approach with
17 Exhibit 1439?

18 THE COURT: Yes, you may.

19 And we're going to break in about five minutes. We're
20 going to give you a ten-minute break and then go the rest of
21 the afternoon until 1:30.

22 BY MR. AXELROD:

23 Q. Mr. Cooper, I'm handing you what's been marked as
24 Exhibit 1439. That's another one of the patents that you
25 talked about yesterday.

1 A. Yes, I remember that.

2 Q. And that patent concerns a process that was never
3 commercially practiced; right?

4 A. That is my understanding.

5 (Pause in proceedings.)

6 BY MR. AXELROD:

7 Q. You also testified yesterday that -- we talked -- you
8 talked with Mr. Gasner about Fuller-Kinyon pumps. Do you
9 recall that?

10 A. Yes, I do.

11 Q. And you testified that, basically, Fuller-Kinyon pumps,
12 they're all the same and they're, essentially, off-the-shelf
13 items; is that right?

14 A. No, I didn't say that. I said Fuller-Kinyon pumps are,
15 basically, off-the-shelf items.

16 Q. Okay. But you're familiar with the fact that DuPont
17 actually makes changes to those pumps; right?

18 A. I have seen that, yes.

19 Q. Right. So they might buy a pump off the shelf, but then
20 they change it?

21 A. I have seen that, yes.

22 Q. And, so -- in fact, they specifically say in the Basic
23 Data Document that those improved designs should not be
24 divulged to Fuller-Kinyon; right?

25 A. That is correct.

1 Q. And that's not a publicly -- what they do is not publicly
2 known; is it?

3 A. No, but USAPTI did not use the improvements by DuPont.

4 Q. That's not my question, sir.

5 A. I apologize. What was your question again?

6 Q. We'll move on to another document.

7 Ms. Mahoney, could you bring up Exhibit 91?

8 And you testified, I believe, from this email about stack
9 velocity; is that right?

10 A. Yes, that is correct.

11 Q. Okay. And there's a specific figure there for stack
12 velocity; right? It says: (reading)

13 "Stack to be fire resistant with a discharge cone to
14 give [number] FPS tip velocity."

15 Then it says: (reading)

16 "Stack internal velocity to be [number] FPS."

17 Do you see that?

18 A. Yes, I see that.

19 Q. And you looked at an OSHA document when you were talking
20 about this email. Do you recall that?

21 A. Among others, yes, that is correct.

22 Q. Okay. So I'm going to hand you, if I can find it, 3484.

23 THE CLERK: Is it in evidence?

24 MR. AXELROD: It's already admitted.

25 (Pause in proceedings.)

1 **BY MR. AXELROD:**

2 **Q.** I'll try to get that document for you, but do you recall
3 that particular document in question?

4 **A.** Not in detail, but I remember it.

5 **Q.** Okay. Then let me get it for you.

6 **THE COURT:** While you're doing that, why don't we take
7 a break. We'll take a ten-minute break.

8 And please remember the Court's usual admonitions, and
9 keep an open mind and do not discuss the case with anybody.
10 Ten minutes.

11 (Proceedings were heard out of the presence of the jury:)

12 **THE COURT:** All right. Ten minutes.
13 You can step down if you like.

14 **THE WITNESS:** Thank you, Your Honor.

15 (Recess taken at 12:39 p.m.)

16 (Proceedings resumed at 12:52 p.m.)

17 (Proceedings were heard out of the presence of the jury:)

18 **THE COURT:** Let's bring in the jury, please.

19 (Proceedings were heard in the presence of the jury:)

20 **THE COURT:** All right. Please be seated.
21 You may continue, Mr. Axelrod.

22 **MR. AXELROD:** Thank you, Your Honor.

23 **Q.** Mr. Cooper, just to pick up where we left off, we were
24 talking about the tip velocity from this email from
25 Mr. Maegerle, which was Exhibit 91.

1 Do you recall that?

2 A. Yes, I do.

3 Q. And I just want to kind of clarify one point. The
4 document -- a moment ago you said that you looked at the OSHA
5 document, among others, regarding this tip velocity; right?

6 A. That is correct.

7 Q. But yesterday when you talked about it, the only document
8 you actually talked about was the OSHA document; right?

9 A. That is correct.

10 Q. And I want to --

11 MR. AXELROD: Your Honor, may I approach with 3484,
12 which is not admitted?

13 THE COURT: Yes, you may.

14 MR. AXELROD: Okay.

15 Q. And, Mr. Cooper, I'm handing you a copy of 3484.

16 Do you recognize that as the OSHA document we've just been
17 talking about?

18 A. Yes, I do.

19 Q. Okay. That OSHA document has nothing to do with
20 industrial stacks; right?

21 A. (Witness examines document.) No. It's very generally
22 about stacks.

23 Q. Right. It's actually about stacks for lab hoods; right?

24 A. That is correct.

25 Q. Okay. So it has nothing to do with stacks from TiO2

1 plants?

2 A. The same rules apply.

3 Q. Well, the thing is, this document, this OSHA document,
4 talks about stack velocity 1.4 times the wind velocity; right?

5 A. That is correct.

6 Q. Okay. And the issue in a TiO₂ factory is if there's no
7 wind; right? I mean, the concern about dispersion is if
8 there's no wind and then the stuff just drops out?

9 A. If there is low wind, yes.

10 Q. Right.

11 A. Not no wind.

12 Q. But if you converted the number in the email, you'd have a
13 pretty significant wind, wouldn't you? I mean, without saying
14 the number referenced there, you'd be talking in the, you know,
15 sort of 40-, 50-, 60-mile-an-hour range; right?

16 A. I design my plants for between 60- and 100-mile-an-hour
17 winds. Yes, you're correct.

18 Q. Okay. Now, I want to ask you about some comments earlier.
19 I want to talk about the Edgemoor with RPS drawing that you
20 talked about with Mr. Gasner, which is the big schematic that
21 he put up.

22 A. Yes.

23 Q. Which is -- I think he gave you the exhibit to copy, and
24 you made a point --

25 And, Ms. Mahoney, can you bring up Exhibit 5?

1 That's an electronic version that's been admitted into
2 evidence.

3 And can you just blow up that center part?

4 And one of the points that you made with Mr. Gasner was
5 that this was for a particular process, this rutile paper
6 slurry, and you said that that plant doesn't produce any dry
7 product.

8 Do you recall that?

9 **A.** That is correct.

10 **Q.** Okay. Did you research DuPont's production out of that
11 plant?

12 **A.** Yes, I did.

13 **Q.** Okay. So you know that between 1974 and 1990, they
14 actually did produce dry product on-site?

15 **A.** That, I didn't know. I only looked more recently than
16 that.

17 **Q.** Okay. Well, so do you know that today they produce
18 product there that is turned into dry product?

19 **A.** That is turned into dry product?

20 **Q.** Yeah.

21 **A.** No, I did not know that Edgemoor produced dry product.

22 **Q.** Okay. But you did research; right?

23 **A.** I did not find that product. I found only RPS coming out
24 of this plant.

25 **Q.** How much time did you spend trying to figure that out?

1 A. I looked at the -- specifically the Delaware environmental
2 reports, and I also checked up on the various databases that I
3 generally look at, like TZMI, to see what they've done.

4 Q. Okay. So you were unfamiliar with the fact that,
5 actually, they do make product and ship it out and have it
6 finished elsewhere into dry product?

7 A. That is not a dry product. That is an intermediate
8 product, not a dry product.

9 Q. But the result of it is a dry product?

10 A. In Arembepe. Is that the process you're talking about?

11 Q. I am simply talking about the fact that you made a point
12 of saying you couldn't make dry product out of the process at
13 Edgemoor.

14 A. A pigment product, that is correct.

15 Q. Right. And what I'm pointing out is, that's not true
16 because a dry product is made out of it; it's just finished
17 elsewhere.

18 A. Therefore, it is not, by definition, a dry product.

19 Q. Well --

20 A. My definition, sorry.

21 Q. Okay. Fair enough.

22 I want to ask you about another patent that you talked
23 about yesterday, and I'm going --

24 MR. AXELROD: Your Honor, may I approach?

25 THE COURT: Yes.

1 BY MR. AXELROD:

2 Q. I'm going to hand you what's been marked as 2285.

3 Mr. Cooper, do you recognize that document as one of the
4 patents you talked about yesterday?

5 A. (Witness examines document.) Yes, I do.

6 Q. And you talked about it, I believe --

7 Can we bring up -- Ms. Mahoney, can you bring up
8 Exhibit 108?

9 Okay. So you talked about this patent, and you said that
10 this was in conjunction with the flue pond; right? And we were
11 talking about -- you were talking about that patents could tell
12 you the diameter of the pipe from this particular patent.

13 Do you recall that?

14 A. That is correct.

15 Q. And what you said is you need to go to the PFD; right?

16 A. That is correct.

17 Q. What PFD do you go to?

18 A. USAPTI PFD.

19 Q. Well, okay. But you need to have a PFD to start with;
20 right? You couldn't figure out the -- if we go to this email,
21 which is Exhibit 108, that gives a particular surface area for
22 a particular DuPont facility; correct?

23 A. That is correct.

24 Q. You couldn't figure that out from the USAPTI flow sheet;
25 could you?

1 **A.** No, and that's what I'm not -- I did not mean to say that
2 either.

3 **Q.** Okay. And you couldn't determine that specific dimension
4 from that patent, could you?

5 **A.** From this patent, no, you cannot.

6 **Q.** Okay. I'd like to show you another patent that you looked
7 at yesterday.

8 **MR. AXELROD:** Your Honor, may I approach with 2318,
9 which has been admitted?

10 **THE COURT:** Yes, you may.

11 **MR. AXELROD:** Thank you.

12 **Q.** And, Mr. Cooper, I'm going to hand you Exhibit 2318. Do
13 you recognize that document?

14 **A.** Yes.

15 **Q.** And you, in talking about -- I think this is talking about
16 flue pond pipe diameter. You talked about a particular example
17 from this patent where there was an interior diameter of
18 11.5 inches and then it tapered into 12.25 inches.

19 Do you recall that?

20 **A.** That's correct.

21 **Q.** Okay. But that the claim for the patent is between 2 and
22 50 inches; right?

23 **A.** I didn't use the claim.

24 **Q.** Right. But the claim is a pretty broad range; right?

25 **A.** Oh, absolutely.

1 Q. All right. And the specific example you used was that
2 11.5 to 12.25 inches; right?

3 A. That is correct.

4 Q. Where has that particular range been used in the real
5 world?

6 A. It has been used in the real world.

7 Q. Where specifically?

8 A. Originally, the Stallingborough flue pond had similar --
9 I've got to be careful now -- similar dimensions.

10 Q. Did it have those exact dimensions?

11 A. I'm not able to state that.

12 Q. Okay. Anywhere else? Is there anywhere that you can
13 publicly identify that used those specific dimensions?

14 A. Publicly identify, no.

15 Q. And those aren't the numbers used by DuPont?

16 A. They are quoted by DuPont in an example.

17 Q. Right. But they're not quoted as what they actually used?

18 A. Today? Are you being specific about today --

19 Q. Sure.

20 A. -- or earlier on?

21 Q. By the way, why can't you say what the Stallingborough
22 numbers are?

23 A. Because I don't know what it is today. I didn't check up
24 on it.

25 Q. But you believe it's somewhere between those numbers?

1 **A.** Those numbers look somewhat familiar.

2 **Q.** Okay. Well, so when you said you were being careful, you
3 were being careful because you didn't want to misstate the
4 figure?

5 **A.** That is correct.

6 **Q.** Okay. Do you believe that that specific figure would be
7 publicly available?

8 **A.** Not from Stallingborough, no.

9 **Q.** And it wouldn't be publicly available for any DuPont
10 facilities either that are currently in operation?

11 **A.** Apart from the patent, you are correct.

12 (Pause in proceedings.)

13 **MR. AXELROD:** I want to -- Your Honor, may I approach
14 with Trial Exhibit 3229, which has not been admitted?

15 **THE COURT:** Yes.

16 **BY MR. AXELROD:**

17 **Q.** Mr. Cooper, I'm handing you what's been marked as
18 Exhibit 3229.

19 **A.** Yes, I remember this.

20 **Q.** Okay. So -- and I want to -- Ms. Mahoney, could you --
21 could you bring up Exhibit 38? I think it's page 2. Yeah.
22 Can you blow that up?

23 Do you see that photograph, Mr. Cooper?

24 **A.** Yes. I'm having trouble making out any details, but I see
25 the photograph.

1 Q. Okay. And the article that you talked about, which is
2 Exhibit 3229, that's about selecting elbows for pneumatic
3 conveyance systems; right?

4 A. That is correct.

5 Q. Okay. Does that article mention elbows that have been
6 field-tested?

7 A. No, it does not.

8 Q. So it doesn't mention whether they've been field-tested by
9 DuPont?

10 A. Certainly not.

11 Q. And does the article mention TiO2?

12 A. No, it does not.

13 Q. Does it mention DuPont at all?

14 A. No, it does not.

15 Q. And the article doesn't specifically mention elbows in the
16 specific shape depicted in Exhibit 38, does it?

17 A. Specifically, no, it does not.

18 Q. Ms. Mahoney, can you bring up Exhibit 67, please? And if
19 you could blow up the top email there.

20 And do you recall, Mr. Cooper, you spent some time with
21 Mr. Gasner talking about the particular temperature? In that
22 first line, it says -- this is an email from Mr. Maegerle
23 (reading):

24 "Walter,

25 "I was somewhat mistaken. Kuan Yin basic data does

1 not call for demineralized water" --

2 **THE COURT:** Slow down. Slow down.

3 **MR. AXELROD:** I'm sorry, Your Honor. And I apologize
4 to the court reporter.

5 **Q.** (reading):

6 "Walter,

7 "I was somewhat mistaken. Kuan Yin basic data does
8 not call for demineralized water but does call for a hot
9 water head tank to supply [number] degrees F water to the
10 filters."

11 Do you recall that?

12 **A.** Yes, I do.

13 **Q.** Okay. And there is a particular figure there in degrees
14 Fahrenheit; right?

15 **A.** Yes, there is.

16 **Q.** And you know, from reviewing the Basic Data Document, that
17 that specific number in degrees Celsius is found in the Basic
18 Data Document; right?

19 **A.** That is correct.

20 **Q.** So it would be fair to say that's what we call a typo?

21 **A.** I believe so, yes.

22 **Q.** Okay. Now, there were a lot of other references in this
23 series of emails that are found in the Basic Data Document;
24 right?

25 **A.** There are some. I wouldn't call it a lot, but there are

1 some.

2 Q. Okay. Well, let me just go down to the next sentence in
3 that email. It says (reading):

4 "Maximum flow rate was specified at [number] GPN."

5 Do you see that?

6 A. Yes, I do.

7 Q. And that's in the Basic Data Document; right?

8 A. I believe so, yes.

9 Q. And you didn't talk about that with Mr. Gasner, did you?

10 A. No, I did not.

11 Q. And then if you go down --

12 Ms. Mahoney, could you go down to the bottom email there?

13 And if you could blow that up.

14 And, Mr. Cooper, in that third line it says (reading):

15 "Oxygen and nitrogen [number] and [number] metric
16 tons per hour, respectively, with the stipulation that
17 certain things, storage capacity, be provided by certain
18 [number] hours of operation."

19 Do you see that? Do you see those references?

20 A. Yes, I do.

21 Q. And those specific references were also found in the Basic
22 Data Document; right?

23 A. They appear to overlap with the information in the Basic
24 Data Book, yes.

25 Q. Well, I mean, those specific figures are there, aren't

1 they?

2 **A.** The 5 and the 2, yes, I found them.

3 **Q.** Please refrain from the specific numbers.

4 **A.** I apologize. The two numbers I believe I found in the
5 Basic Data Document, yes, that's correct.

6 **Q.** And you didn't talk about those with Mr. Gasner, did you?

7 **A.** No, I did not.

8 I should point out, I believe for this design, the
9 900 gallons was in error.

10 **Q.** Ms. Mahoney, could you bring up Exhibit 111?

11 Do you recall talking with Mr. Gasner about these
12 oxidation-area direct-fired heaters?

13 **A.** Yes, I do.

14 **Q.** Okay. And a couple things. I believe, when you
15 testified, you indicated that the flow rate temperature and
16 pressure are supplied by the technology provider. Is that
17 right?

18 **A.** That is correct.

19 **Q.** Okay. So in this case the technology provider would be
20 USAPTI; right?

21 **A.** Correct.

22 **Q.** And, Ms. Mahoney, could we go to the next page? And,
23 Ms. Mahoney, could you blow up that top half?

24 So what we're looking at here, Mr. Cooper, is the
25 information that USAPTI had that it was going to be provided;

1 right?

2 A. Correct.

3 Q. And there is a specific design pressure identified. Do
4 you see that?

5 A. Yes, I do.

6 Q. There's a number, PSIG at a particular temperature?

7 A. Yes, I do.

8 Q. And that specific information is from the Basic Data
9 Document, isn't it?

10 A. It's also what I use. So the answer is, I believe it
11 overlaps with the Basic Data Book, but it is not unique to the
12 Basic Data Book.

13 Q. Right. But it's in the Basic Data Book?

14 A. Yes, it is.

15 Q. Okay. And then if you go down a little bit further, it
16 says, "Maximum tube velocity." Do you see that? And there's a
17 particular FPS there?

18 A. Yes, I do.

19 Q. And that's also from the Basic Data Book, isn't it?

20 A. Yes, and it's also from other -- it's a commonly used
21 number. It's not specific to the Basic Data Book.

22 Q. Right. The Basic Data Book is a compilation of a whole
23 bunch of information, isn't it?

24 A. Yes, it is.

25 Q. And some of it you can't get anywhere else; right?

1 **A.** Yes. This happens to be not one of those.

2 **Q.** Understood.

3 And if you could go down, Ms. Mahoney, to the bottom half.
4 If you could step back and blow up that bottom half where it
5 says, "Oxygen heater."

6 And, Mr. Cooper, it says there, "Heat certain pounds per
7 hour of a certain percentage oxygen from a particular
8 temperature."

9 Do you see that?

10 **A.** Yes, I do.

11 **Q.** And that information is also from the Basic Data Book,
12 isn't it?

13 **A.** Yes. And it's available from other sources as well.

14 **Q.** And that's the information the technology supplier was
15 providing in this case to its vendor?

16 **A.** That is correct.

17 **Q.** Ms. Mahoney, can you please bring up Exhibit 112?

18 Mr. Cooper, do you recall talking to Mr. Gasner about the
19 specifications for oxidation bag filters?

20 **A.** Yes, I do.

21 **Q.** Okay. And if you could go to the next page, Ms. Mahoney,
22 to page 2.

23 So this is another example of the information -- the
24 specification coming from the technology supplier, which here
25 was USAPTI?

1 **A.** Yes. This is a preliminary specification.

2 **Q.** Okay. And on that page, do you see there's a line there
3 that says, "Bag surface should be based on a particular CFM
4 feet squared to bag filter area"?

5 **A.** Yes, I do.

6 **Q.** That's from the Basic Data Document as well?

7 **A.** Yes, and from other sources. And I should point out,
8 that's not what was used.

9 **Q.** It was used right here, wasn't it?

10 **A.** In this document, that is correct. MikroPul actually
11 modified it when they sent back their quotation.

12 **Q.** Ms. Mahoney, can you bring up Exhibit 125?

13 **THE COURT:** After this exhibit, we're going to break.

14 **MR. AXELROD:** Very well, Your Honor.

15 **THE COURT:** All right.

16 **MR. AXELROD:** And, Ms. Mahoney, if you could blow up
17 that -- thank you.

18 **Q.** Mr. Cooper, do you recall talking with Mr. Gasner about
19 this issue of slurry viscosity?

20 **A.** Yes, I do.

21 **Q.** And when you testified, you said you used that last
22 number. It says, "Estimated viscosity with pump and agitator
23 work input," and then it has a particular number.

24 Do you see that?

25 **A.** I do.

1 Q. Okay. But there's a whole bunch of other numbers up
2 there; right?

3 A. Correct.

4 Q. And they're all found in the Basic Data Document; right?

5 A. Yes, and from other sources.

6 Q. Okay. You also indicated that this information was almost
7 identical to Ashtabula 1?

8 A. Line 1, yes, that is correct.

9 Q. Ashtabula Line 1. So which parts are identical?

10 A. The pH range.

11 Q. Okay.

12 A. I cannot recall, but I know we mentioned dissolved
13 chlorine, the exact range there, 400 grams per liter --

14 Q. If you could refrain from the specific number, sir.

15 A. I'm sorry.

16 Q. Thank you.

17 A. I take them as well-known numbers.

18 And the relation to dissolved chlorine.

19 The relation to parts per million chlorides is similar to
20 what I'm familiar with from Ashtabula 1.

21 The grams per liter TiO₂ is similar to what I'm familiar
22 with Ashtabula 1.

23 The pigment bulk density is a number I typically use
24 myself, and that also came from Ashtabula Plant 1.

25 Q. Now, are those numbers publicly available? I mean, could

1 I go out and find them on the Internet?

2 **A.** The pH range and the average is mentioned in patents.

3 **Q.** That specific range and that specific average?

4 **A.** The lower number certainly is, and I believe the average
5 is as well.

6 **Q.** In what patent?

7 **A.** One we quoted yesterday. I'm sorry. I don't remember the
8 number.

9 **Q.** Okay.

10 **A.** The dissolved chlorine, the absolute number, no; but the
11 fact that there is dissolved chlorine, yes.

12 Same comment regarding chlorides: The absolute number,
13 no; but the fact that there are dissolved chlorides, yes.

14 400 grams per liter -- sorry. The TiO₂ content of the
15 water slurry, that is mentioned in patents.

16 The pigment bulk density. I don't know whether I've seen
17 it publicly. It's just a familiar number to me.

18 **Q.** Have you ever seen this particular collection of numbers
19 in one place publicly available?

20 **A.** No, I have not.

21 **THE COURT:** All right. We're going to break for the
22 day.

23 You may step down and be excused.

24 **THE WITNESS:** Thank you, Your Honor.

25 **THE COURT:** You can leave the courtroom if you wish.

(Pause in proceedings.)

THE COURT: All right. So just as soon as we close the door, I'll give you your instruction for the evening.

All right. The door is closed and locked.

So I'm going to remind you again of your conduct as jurors. It becomes more important every evening because you're getting more and more information and more and more time and effort is invested in the case. So the stakes, for purposes of keeping this conduct, is very, very important, or obeying this instruction.

So, first, keep an open mind throughout the trial and do not decide what the verdict should be until you and your fellow jurors have completed your deliberations at the end of the case.

Second, because you must decide this case based only on the evidence received in the case and on my instructions as to the law that applies, you must not be exposed to any other information about the case or to the issues it involves during the course of your jury duty.

Thus, until end of the case or unless I tell you otherwise, do not communicate with anyone in any way and do not let anyone else communicate with you in any way about the merits of the case or anything to do with it. This includes discussing the case in person, by phone, Smartphone, or electronic means, via email, text messaging, or in or on any

1 Internet chat room, blog, website, including such social
2 networking media like Facebook, Myspace, LinkedIn, YouTube, and
3 Twitter, or other feature.

4 This applies to communicating with your fellow jurors
5 until I give you the case for deliberation; and it applies to
6 communicating with everyone else, including your family
7 members, your employer, the media or press, and the people
8 involved in the trial, although you may notify your family and
9 your employer that you have been seated as a juror in the case.

10 But if you're asked or approached in any way about your
11 jury service or anything about this case, you must respond that
12 you have been ordered not to discuss the matter and to report
13 the contact to the Court.

14 Because you will receive all the evidence and legal
15 instruction you properly may consider to return a verdict, do
16 not read, watch, or listen to any news or media accounts or
17 commentary about the case or anything to do with it. Do not do
18 any research, such as consulting dictionaries, searching the
19 Internet, or using other reference materials; and do not make
20 any investigation or in any other way try to learn about the
21 case on your own.

22 The law requires these restrictions to ensure the parties
23 have a fair trial based on the same evidence that each party
24 has had an opportunity to address.

25 A juror who violates these restrictions jeopardizes the

1 fairness of these proceedings, and a mistrial could result that
2 would require the entire trial process to start over.

3 If any juror is exposed to any outside information, please
4 notify the Court immediately.

5 Just to update you on the schedule. It's highly likely
6 that we will complete the presentation of evidence tomorrow, in
7 which case we will begin closing arguments on Tuesday after the
8 long weekend, and then the case will be yours sometime next
9 week, and then the schedule will be yours. And we'll talk more
10 about the schedule of deliberation.

11 So with that said, thank you for your attention. We'll
12 see you tomorrow morning, and have a wonderful evening.

13 (Proceedings were heard out of the presence of the jury:)

14 **THE COURT:** All right. The jury has left the
15 courtroom.

16 Let's get some estimates, Mr. Axelrod.

17 **MR. AXELROD:** I'm guessing about an hour and a half,
18 Your Honor.

19 **THE COURT:** Okay. And I assume there will be some
20 redirect?

21 **MR. GASNER:** A little.

22 **THE COURT:** Okay.

23 **MR. GASNER:** Not much, though, so far.

24 **THE COURT:** Okay. Are you going to have questions for
25 this witness?

1 **MR. FROELICH:** Your Honor, I won't have more than five
2 or ten questions.

3 **THE COURT:** Okay. Great. Good. Okay. Not good,
4 but --

5 **MR. FROELICH:** I understand.

6 **THE COURT:** -- I'm just acknowledging what you're
7 saying.

8 So I'm thinking a couple of hours tomorrow.

9 And then you have your paralegal, Ms. Agnolucci?

10 **MS. AGNOLUCCI:** Yes, Your Honor.

11 **THE COURT:** And how long would you anticipate she'll
12 be on?

13 **MS. AGNOLUCCI:** It's not going to be very long. I
14 would guess an hour and a half. It could be shorter.

15 **THE COURT:** All right.

16 **MR. HEMANN:** And, Your Honor, I've looked at the
17 documents that Ms. Agnolucci identified. There's five of them,
18 and I think that, given the Court's ruling, we'll move through
19 the admission of those documents pretty quickly.

20 **THE COURT:** Okay. Good.

21 So it may well be -- and do you anticipate at this point
22 any rebuttal case?

23 **MR. AXELROD:** I do, but I think we need -- it would be
24 very brief, and I need to see where we end up. But I do
25 anticipate a rebuttal case.

1 **THE COURT:** Okay. Well, then I guess we're back to
2 sort of playing it by ear.

3 Yes. You were going to say something?

4 **MR. AXELROD:** Well, depending on how the rest of
5 tomorrow goes, it may be something that can be resolved
6 tomorrow. I mean, that would be my hope.

7 **THE COURT:** All right. Well, it's got to be -- I
8 would want it to be more than hope that we would complete the
9 case tomorrow, because I don't think there's any reason to draw
10 it out any longer. But we'll see what happens.

11 So depending upon when we conclude tomorrow with the
12 presentation of evidence will determine whether there's going
13 to be time tomorrow to at least begin talking about the jury
14 instructions and having our charging conference.

15 As a default, you know, we'll go into Friday, probably
16 Friday morning early, because it's a holiday and it would be
17 great if everybody can get -- you know, leave or do whatever
18 they need to do to prepare for next week.

19 So my current plan is to either begin or complete the
20 charging conference, if necessary, on Friday morning.

21 Now, I was kind of looking at the numbers that you all
22 estimated for closing argument, and I don't see how there's any
23 possible way that we could do all of the closing arguments and
24 the jury instructions in one day. I mean, it would be -- I
25 mean, we could do it, but we'd go until about 4:00 o'clock, and

1 I think the jury would be -- have saucer eyes by that time.

2 So my proposal is what I said before, which is to do the
3 instruction, have the Government do their initial closing,
4 have -- I assume Mr. Liew and USAPTI will do their closing; and
5 then reserve Mr. Froelich and the rebuttal for the following
6 day, because it's going to take -- even doing what I just said,
7 it's going to take most of Tuesday, I think.

8 So unless you all can figure out some other configuration,
9 it's going to have to go over two days, and I can't think of
10 any other way to split this up that would not disadvantage
11 anybody else.

12 In fact, you know, if there's any, you know, words of
13 wisdom that Ms. Agnolucci and Mr. Gasner wanted to pass on to
14 Mr. Froelich to rebut something, they'd have that opportunity
15 to do that and make sure that that's covered.

16 So is that -- do you have any strong objection to that,
17 Mr. Gasner?

18 **MR. GASNER:** Moderately strong, Your Honor. I guess I
19 do believe in the mythology of primacy and last. I would
20 rather have the Defense case and the Government rebuttal on the
21 same day, just because I think it really gives the Government
22 an advantage to listen to my entire closing, have overnight,
23 and then, you know, come in with guns blazing for an unlimited
24 amount of time. I do think that's unfair.

25 **THE COURT:** But how are we going to do that? I mean,

1 it would mean -- if you run the numbers and just taking
2 estimates that you all, you know, gave, it came out to -- it
3 came out to about six hours -- six hours -- seven hours with
4 the instruction and everything. So a seven-hour day.

5 I mean, I assume if we started -- even if we did sort of
6 the normal, you know, traditional day of something like 9:00 to
7 4:00, assuming the jury could do that, I'm not sure that we'd
8 get it all in.

9 I mean, it's to be determined, but I wouldn't say that the
10 Eighth Amendment applies to juries as far as cruel and unusual
11 punishment, but there is -- there's an element of -- and for
12 both -- and I'm saying it somewhat facetiously, but just in
13 terms of the ability to absorb it all is going to be difficult
14 and may just take away from the effectiveness.

15 So think about it. And, again, I'm going to make the
16 final call, I think -- I don't think; I know it's
17 discretionary, but I do -- if we went a traditional day, it
18 would take seven hours. That would -- we'd have to give the
19 jury at least 45 minutes for -- you know, for a lunch break or
20 something with a couple of shorter breaks. That's getting
21 pretty -- you know, we'd be going to close to 5:00 o'clock.

22 And I'm just not sure that that's necessary or
23 appropriate, balancing it against what I think is the urban
24 myth. Given the length of this trial, I don't think that the
25 verdict's going to be based on the closing arguments, as good

1 as all of you, I'm sure, you will be.

2 So I'm not going to take a position on it right now.
3 Let's think about it. Let's do a reality check. If you have
4 different -- and I was just taking the numbers that you all
5 estimated. So -- and I gave that -- you know, the fullest -- I
6 just accepted those numbers and came up with this roughly seven
7 hours of activity that we had to do, including breaks, the
8 instruction, and all of your arguments.

9 So, again, I'll think about it. Maybe we'll ask the jury
10 about what their preference is. I mean, I won't say, "Do you
11 want to hear eight hours of lawyers on one day or not?" That's
12 not a very good choice. But we'll figure out a way to pose it
13 to the jury.

14 So let's think about it, and I'm open, but I was just
15 running the numbers and thinking how -- I don't want you all to
16 have to rush. I certainly don't want to rush through the
17 instructions.

18 And, so, I don't want -- I mean, especially in fairness to
19 the Government, who goes last, if they had to start at, let's
20 say, 4:00 o'clock and the jury has been at it for six hours, if
21 there's a level of unfairness there.

22 So we'll see. We'll talk about it. But my initial
23 thought is to split it up. That's the way I've done it before,
24 and I don't think any issue that you're concerned about would
25 not be sufficiently mitigated, but I'm keeping an open mind.

1 So keep your schedules open for -- I mean, tomorrow we
2 won't go beyond 1:30 because I have a criminal calendar, and
3 Friday, just plan on 8:00 o'clock just on your calendars. And
4 if we don't need it, we don't need it.

5 I'm assuming that, not having seen your objections or
6 reactions to the Court's proposed jury instructions, that the
7 way I conduct these is, the parties have already briefed the
8 issue; unless they have some new argument or new case or
9 something or the Court reconsiders, I'm not going to have
10 arguments on every open jury instruction.

11 If I have specific questions, I'll ask them. And then,
12 you know, you'll have your objections and requests, and they'll
13 be in the record, and we'll move on from there.

14 So I don't anticipate -- my charging conferences, except
15 in patent cases where we make it up as we go along because of
16 the claim construction, I don't anticipate taking that long.

17 Did you want to say something?

18 **MR. GASNER:** Yes, Your Honor, just briefly.
19 Mr. Hemann, just on my way up to the podium, mentioned an idea
20 that I just want to throw out for the Court, and I may not have
21 it entirely correct.

22 But if, indeed, we don't have a lot of redirect tomorrow
23 and the examination of Ms. Hernandez goes relatively quickly
24 and the Court is going to have a short charging conference, it
25 may be possible to do the actual charging of the jury

1 conceivably tomorrow or Friday.

2 **THE COURT:** I wouldn't do it Friday because they gave
3 us their vote at the beginning no Fridays.

4 **MR. GASNER:** That's true. That's true.

5 **THE COURT:** So it's a possibility. There are
6 logistical issues. You know, it's not -- I've used the term
7 before, immaculate conception, where I decide an instruction
8 and it magically appears on the juror's desk. It needs to be
9 checked, it needs proofread by everybody and then copied,
10 because that's where a lot of errors get committed when you do
11 things fast.

12 So it's something to consider, and that would save us 45
13 minutes or an hour or whatever it is. And I'm certainly
14 willing to consider that, although I think it's pretty
15 ambitious, and I don't want to rush through the charging
16 conference.

17 So let's let events unfold, and we'll see -- I understand
18 all the options.

19 Yes, Mr. Froelich?

20 **MR. FROELICH:** Your Honor, two things.

21 **THE COURT:** Did your office thaw out yet?

22 **MR. FROELICH:** Yes. My understanding is our
23 electricity -- power has come back, and Your Honor should have
24 it within -- I've got to check it when I leave here, but
25 Your Honor should have it.

1 The other thing is, I know it may just be a formality, but
2 I would renew my Rule 29s at the end of --

3 **THE COURT:** You should. Everybody should do that,
4 yes.

5 **MR. FROELICH:** -- end of the case. So that won't take
6 long, but I just wanted to --

7 **THE COURT:** No. We have to reserve time. And if I
8 forget, which I sometimes do, just stand up and interrupt me
9 whatever I'm doing.

10 **MR. HEMANN:** And then Mr. Froelich -- there was some
11 discussion about voir diring the defendants with regard to
12 their decisions not to testify. That's on the agenda as well.

13 **THE COURT:** Yeah. I understood from Mr. Gasner --
14 maybe I'm remembering wrong -- that he didn't think -- he
15 wasn't asking for it or didn't think it was appropriate with
16 respect to Mr. Liew.

17 **MR. GASNER:** That's true. But if the Court is going
18 to do it for Mr. Maegerle, then I think it would be prudent
19 just to have Mr. Liew go through that process as well.

20 **THE COURT:** All right. I can do them both at the same
21 time, actually.

22 **MR. FROELICH:** Actually, it's only two or three
23 questions.

24 **THE COURT:** Yeah. Maybe more than that. But, anyway.

25 All right. And since you've already gone over it with

1 him, it should be pretty pro forma.

2 But, in any event, actually, I had a case where a
3 defendant said he wanted to testify after his lawyer said he
4 didn't. We had to take a break at that point. And he didn't
5 wind up testifying, but it's an interesting issue, because
6 they're now a Ninth Circuit case in certain circumstances,
7 which may be expanded at some point, that if a defendant wants
8 to testify, they have the absolute right to do that, and a
9 lawyer can't overrule them. But that's in competency hearings.
10 So the Ninth Circuit has yet to speak on that.

11 **MR. FROELICH:** The Fifth, Your Honor, is very strong
12 on you have to -- you know, you have to ask.

13 **THE COURT:** Interesting. In our state court it's
14 common, too, and I think it's a good practice.

15 **MR. FROELICH:** Off the record, I thought of a way,
16 Your Honor, to -- we can shorten it a lot by just not allowing
17 the Government to have rebuttal.

18 **THE COURT:** There are other ways we can shorten it,
19 too, which you probably wouldn't find very helpful either.

20 All right. We'll see you tomorrow. Thanks.

21 **MR. HEMANN:** Thank you, Your Honor.

22 **MR. FROELICH:** Thank you, Your Honor.

23 (Proceedings adjourned at 1:35 p.m.)

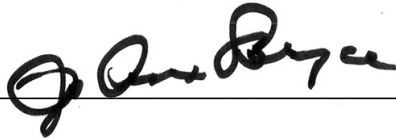
24 ---oOo---

25

CERTIFICATE OF REPORTER

I certify that the foregoing is a correct transcript
from the record of proceedings in the above-entitled matter.

DATE: Wednesday, February 12, 2014

A handwritten signature in black ink, appearing to read "Jo Ann Bryce", is written over a horizontal line.

Jo Ann Bryce, CSR No. 3321, RMR, CRR, FCRR
U.S. Court Reporter